ARIZONA

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THE UNIVERSITY OF ARIZONA

Mural at the University of Arizona Campus Store
Photo: Chris Richards

ARIZONA

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Cover photo: Molly Lakustiak, Lydia Russell, Kelly Wetteland and Margaréta Vráblová celebrate after winning the 2024 Women's Collegiate Triathlon National Championship; photo: Marison Bilagody, Arizona Athletics. Story on Page 50.

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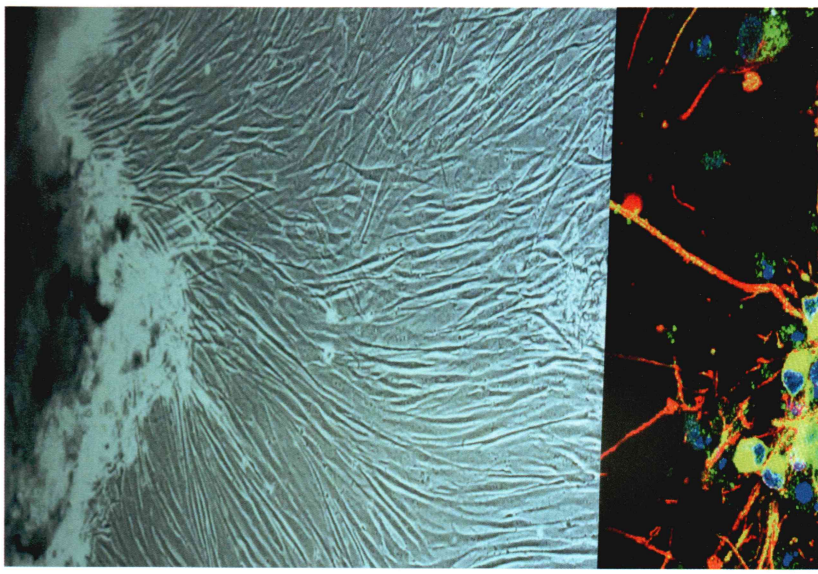
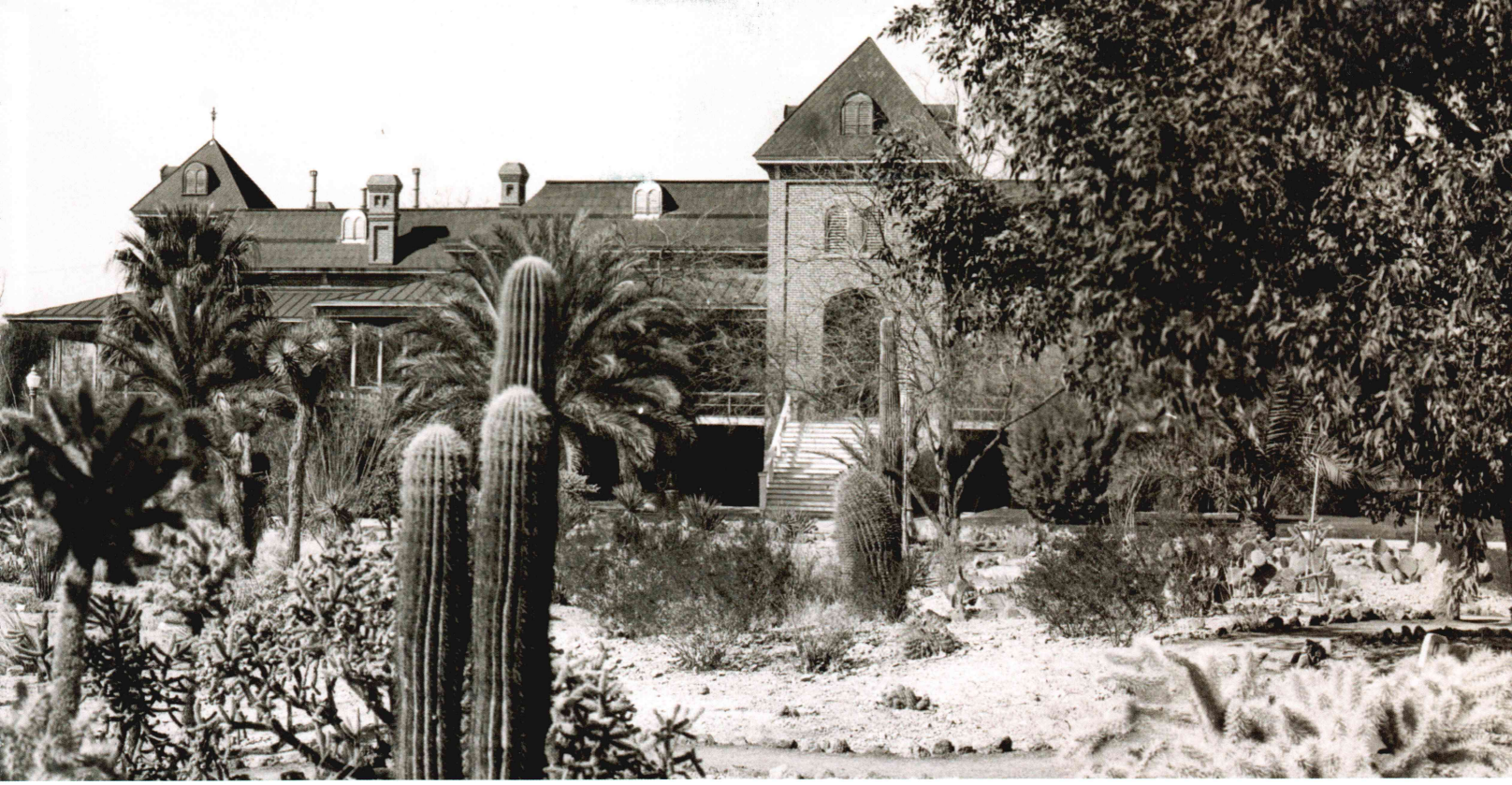
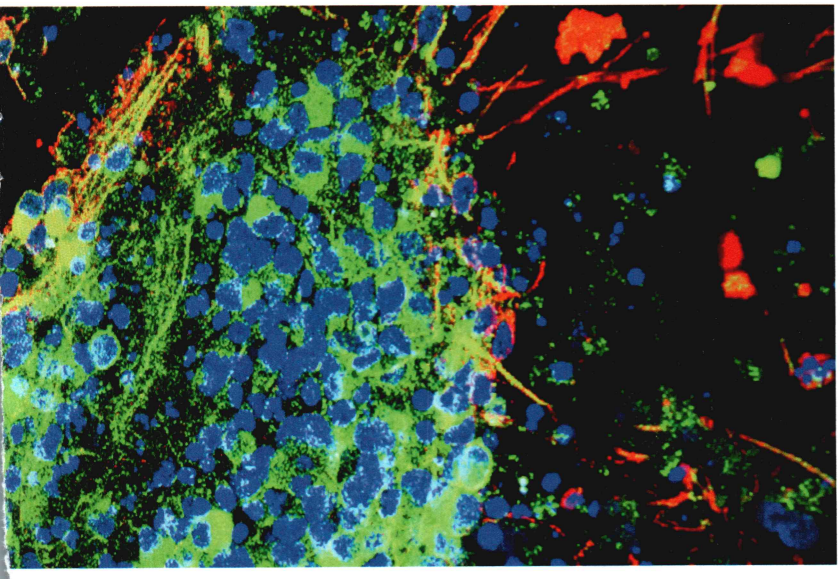
The U of A recently surpassed $1 billion in research expenditures — a major milestone. We talked with new Senior Vice President of Research Tomás Díaz de la Rubia about his background and vision, including an investment in fusion energy, the combination of artificial intelligence with medical research, and what continues to fascinate him about Formula 1 racing.







Letter to the Editor

Dear Cory,

Thank you for your article in the Winter 2025 edition of Arizona Alumni Magazine, What 'Bear Down' Means To Me. I am a Wildcat For Life.

It was over 70 years ago that I grew up on a dairy farm in southeast Wisconsin, where my father often used the encouraging advice to "bear down," meaning exactly what you described.

After junior college I migrated to Tucson and matriculated at the University of Arizona, having no idea what it would be like. When I learned the story of John Byrd "Button" Salmon conveying the very words of my father to Coach "Pop" McKale, it made me feel right at home, and I knew immediately U of A was my kind of school.

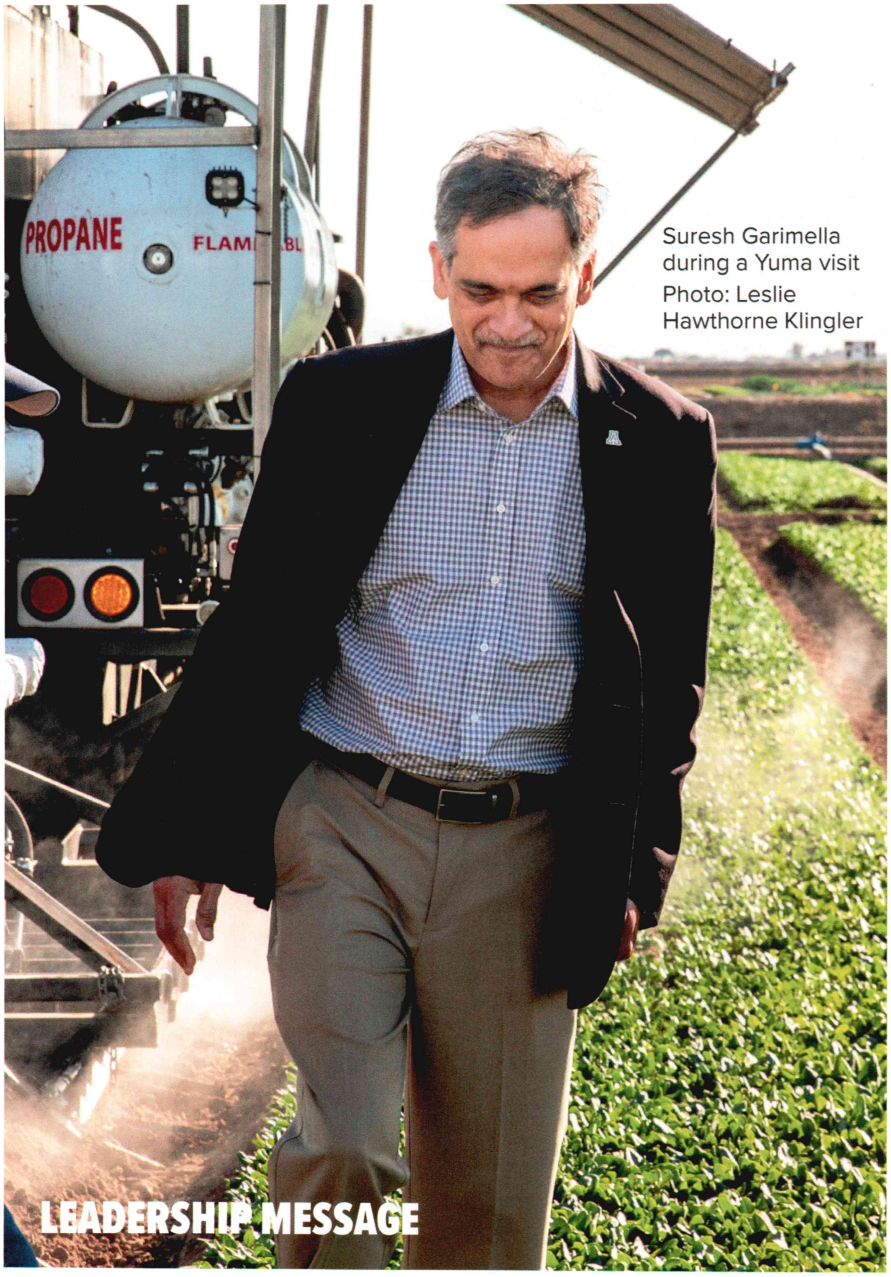
I earned my Bachelor of Arts degree in 1969 and did some graduate work in counseling, working several years in Arizona before moving back to Wisconsin.

I am forever proud of and grateful for the education afforded me at the U of A. I appreciate the Arizona Alumni Magazine and look forward to its arrival, reading it cover to cover.

Thanks again!

Sincerely,
William Paul Brinkman '69
Wildcat For Life

LETTERS TO THE EDITOR
Thoughts? Reflections? We welcome your engagement at alumnienews@uafoundation.org. Please note that we may edit and condense your letter for clarity and run it in a future issue of the magazine.



Suresh Garimella during a Yuma visit
Photo: Leslie Hawthorne Klingler

LEADERSHIP MESSAGE

On March 25, the University of Arizona held an installation celebration that brought together our campus community, friends, alumni and community partners. While the event focused around my formal investiture as the U of A's 23rd president, this tradition of an installation is about more than a new president — it marks a transition for the university and our community, and it is an expression of our collective will and aspiration to reach even greater heights.

You may have seen a video of my remarks from the installation ceremony, when I described the U of A as a keystone institution for Arizona, and for our community of alumni and friends around the world. At the end of that speech, I shared a sneak peek of the strategic imperatives that we have now shared with the campus community, and which were distributed broadly to all of our supporters.

Moving forward, these strategic imperatives will be a rallying point for our collective efforts and our hopes for the future of the institution. They are: success for every student, research that shapes the future, and engagement with our communities to create opportunity together. The stories in this magazine are a snapshot of all this institution is capable of, and they provide examples of how we bring these imperatives to life every day.

In the pages that follow, you can read about the way we are helping our neighbors in Yuma through innovations in agricultural technology and the facilitation of rural Internet access (Page 26), or a short profile of our new Senior Vice President of Research and Innovation Tomás Díaz de la Rubia, who is an experienced leader and an accomplished scientist and professor (Page 46).

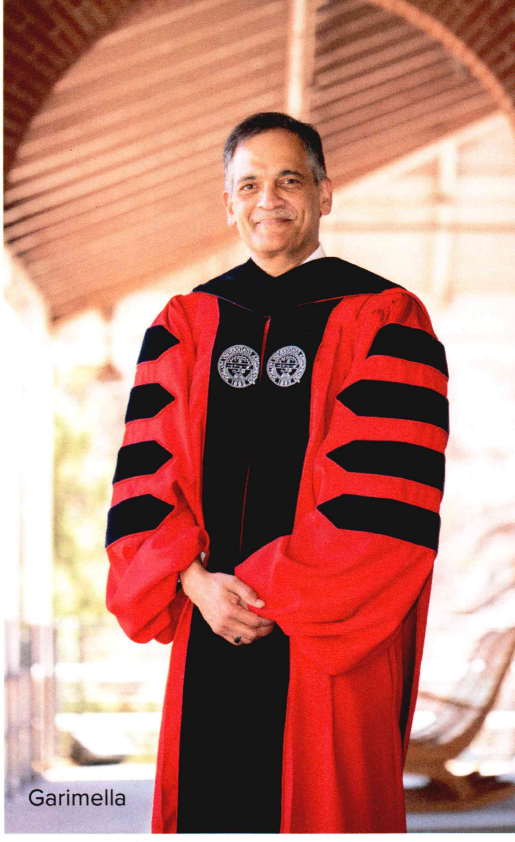
For an example of what our future might look like, you can read about one of the many ways we are using new technology such as artificial intelligence, including its capacity to diagnose traumatic brain injury (Page 44). A story about the history of the Campus Arboretum (Page 32) highlights how even the grounds of our beautiful main campus enhance our research endeavors while simultaneously offering a place to enjoy a quiet moment.

These are all important stories, but the most vital stories we tell happen at Commencement, as our graduates prepare to take the next steps in their lives. As we close out another academic year, I hope you join me in congratulating them. Earning a college degree is no small feat, especially when balanced with the responsibilities of work, family and community. It is all the more important that at the U of A, we remove as many barriers as we can so that our students have access to the education they deserve, regardless of circumstance. In supporting that effort, we give our students the opportunity to shape our future.

Bear Down,
Suresh Garimella
President
University Distinguished Professor

THE UNIVERSITY OF ARIZONA
THE INSTALLATION OF
SURESH V. GARIMELLA
23RD PRESIDENT OF THE UNIVERSITY OF ARIZONA
March 25, 2025

(L): Chair Cecilia Mata, Arizona Board of Regents (R): Garimella
Photos: Chris Richards, unless otherwise noted



Garimella

Gov. Katie Hobbs and Garimella

Read remarks by University of Arizona President Suresh Garimella shared during the ceremony celebrating his installation as the U of A's 23rd president.

Garimella and President Buu Nygren of the Navajo Nation

Photo: Molly Condit

SUBJECT/OBJECT

McKale practice net, January 2025

By Mike Powell

Pictured here is a practice net at McKale Center. Not a game net, not an event net, not one of those nets they'll take down on TV, surrounded by screaming fans, but a net players cut their teeth on day in, day out. Game nets are single use, but Athletics tells us the teams like to keep the practice ones up as long as possible. It's a comfort thing, part of the ritual of building a season, like a favorite pair of sneakers or a lucky charm on the dashboard of your car. The game net sees you once, the practice net sees all the work it took for you to get there. The practice net knows where you've been. Just because nobody'll save it when it comes down doesn't mean it doesn't count. ◆

Photo: Chris Richards

NEWS UPDATES

Photo: Craig Pessman

Congrats, wheelchair basketball

In late March, the University of Arizona men's wheelchair basketball team participated in the National Intercollegiate Wheelchair Basketball in Champaign, Illinois. They made it to the finals for the third year in a row. This time, they won.

"To be able to give back to a university that has given me so much as a student-athlete, really means the world," says team captain Ben Thornton. "That's really what this national championship really stands for to me, is the opportunity to give back. Thank you so much again for believing in me as a captain of this team, as a leader."

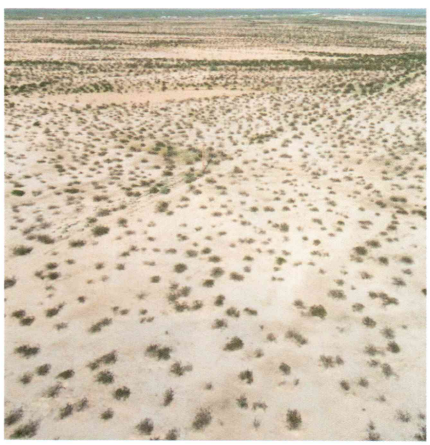
The team was coached by Mike Beardsley, who started out as a student worker in Adaptive Athletics back in 2009, fell in love with wheelchair basketball and eventually worked his way up to head coach in 2019. "I want to thank your parents and you guys for trusting a 29-year-old coach with zero experience, but we did it, and you guys believed in me, and that buy in is what got us here," he says. Remarkable.

Next year, they'll get a chance to defend their title on familiar territory: the McKale Memorial Center, site of the 2026 National Intercollegiate Wheelchair Basketball men's and women's tournaments — yet another feather in Arizona Adaptive Athletics' cap. See you there.

Carbon dioxide stored deep underground

The Arizona Geological Survey at the U of A is spearheading a $12 million Department of Energy-funded study to assess the feasibility of storing carbon dioxide underground in Arizona's Harquahala basin, about 60 miles west of Phoenix. This initiative, part of the national CarbonSAFE Phase II program, seeks to mitigate carbon emissions by injecting captured CO_2 into deep saline rock formations, potentially reducing Arizona's atmospheric carbon impact by 25% over the next 40 years.

The study, which started in March, focuses on sedimentary and volcanic rocks more than 5,000 feet below ground. These formations are believed to have the necessary permeability and porosity for effective long-term CO_2 storage. Researchers from the U of A, the New Mexico Institute of Mining and Technology, the University of Utah, and Los Alamos National Laboratory will



James Werner, director of the U of A San Xavier Mining Laboratory, conducts a tour for high school students participating in the Summer Engineering Academy.
Photo: College of Engineering

collaborate, with Arizona receiving $9 million of the funding.

The Harquahala basin was chosen based on promising geological characteristics, proximity to power plants emitting CO_2, existing pipeline infrastructure and low risk of earthquakes. Advanced techniques, including well drilling and 2D seismic imaging, will help create a 3D model of the storage reservoir and evaluate risks. The project could result in the storage of 50 million metric tons of CO_2 over 30 years, marking a significant step toward the U.S. government's 2050 atmospheric carbon reduction goals.

Seed funding for startups

The Wildcat Philanthropic Seed Fund, created to support startups based on U of A innovations, has exceeded its initial $2 million goal within a year of fundraising and is now accepting applications for its first investments. Overseen by Tech Launch Arizona, the fund aims to reach $5 million.

To qualify for funding, startups must apply online and demonstrate a strong U of A connection, either by having a student, alum, faculty or staff member on the team or by working to commercialize university intellectual property.

The fund launched in late 2023 with a $1 million anonymous donation, which was followed by a $500,000 gift and a $500,000 matching challenge from the Thomas R. Brown Family Private Foundation in early 2024. Designed as an evergreen resource, the fund helps startups navigate the so-called "valley of death," the critical early stage when financial support is scarce and failure rates are high.

Beyond funding, the initiative offers valuable hands-on learning for U of A students. By fostering both innovation and student engagement, the Wildcat Philanthropic Seed Fund strengthens the university's role in turning groundbreaking research into successful ventures.

Mining responsibly

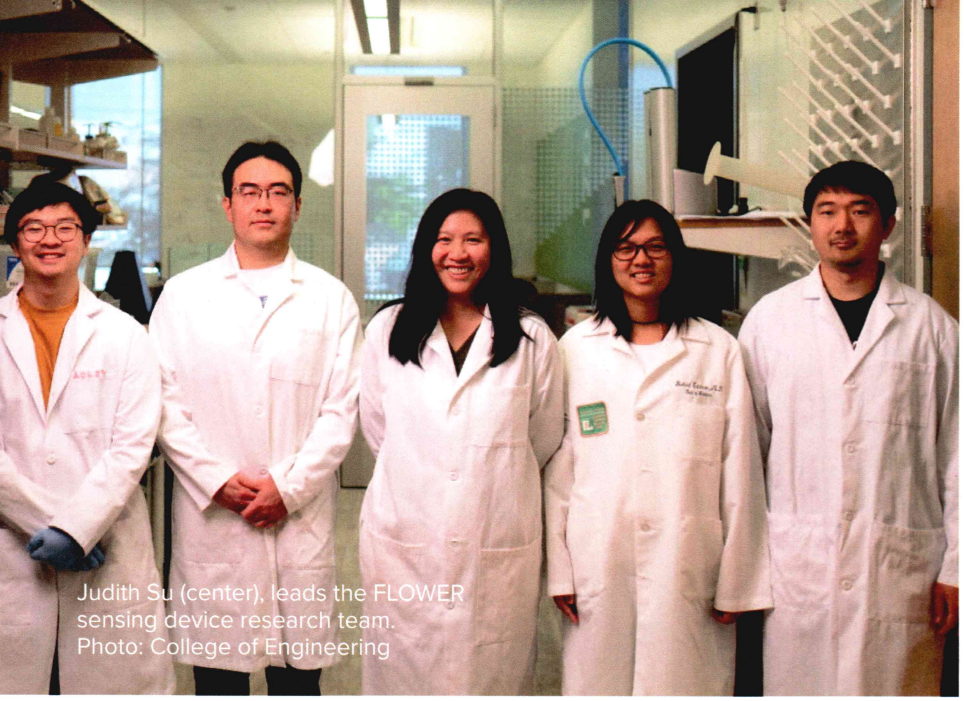
A $2.5 million grant from the Freeport-McMoRan Foundation will support the U of A in developing K-12 programs that educate teachers and students about responsible mining and inspire students to pursue education and careers in the mining industry.

The university offers one of only 13 nationally accredited mining programs, playing a key role in sustainable mining education and preparing future professionals for a workforce focused on sustainable materials and innovation.

The grant provides scholarships for U of A mining students, enhancing access and attracting top-tier graduate students. It also supports K-12 outreach programs that will provide Southern Arizona students with opportunities to learn about the importance of the mineral resources that shape daily life, where those minerals come from and modern mining's advancements in producing safe, sustainable resources for the planet's growing population.

This new grant builds on a 2019 award of $2.5 million from Freeport-McMoRan that supported K-12 outreach, funded U of A student scholarships, modernized facilities for mining engineering and expanded research capacity in the U of A's Geotechnical Center of Excellence.

Freeport-McMoRan has partnered with the U of A for nearly two decades and has donated more than $6 million to the university since 2005. The new grant will be shared by the U of A School of Mining and Mineral Resources, the Department of Mining and Geological Engineering, and the Department of Geosciences Lowell Program in Economic Geology.



Judith Su (center), leads the FLOWER sensing device research team. Photo: College of Engineering

FLOWER power

Judith Su, a U of A associate professor in biomedical engineering and optical sciences, has secured $2.1 million from the U.S. Army to develop a portable version of her groundbreaking FLOWER (Frequency Locked Optical Whispering Evanescent Resonator) sensing device. Known for its unparalleled sensitivity, FLOWER can detect compounds at zeptomolar concentrations (600 particles per liter) without requiring chemical tagging.

Funded by the U.S. Defense Threat Reduction Agency with $2.8 million, Su's research has demonstrated FLOWER's efficient and cost-effective ability to detect part-per-trillion concentrations of hazardous chemicals like DIMP, a byproduct of the nerve agent sarin.

The device's ability to identify airborne toxins, including nitric oxide and formaldehyde, offers significant applications for military personnel, potentially saving lives by providing early warnings of chemical threats. Euan McLeod, associate professor of optical sciences, explains, "This will keep people safer by giving them an early warning at a longer distance from the source."

The next phase of the project will create a user-friendly, handheld prototype suitable for real-world use. The sensor will feature simple indicators, such as a red light to signal the presence of harmful chemicals. Su envisions broad applications for the device, including proactive health care and home diagnostics, where users could monitor health indicators through simple interactions with the sensor. The project underscores the potential for innovative technology to protect lives in a wide variety of contexts.

Approach the bench

Judge Maria Elena Cruz '98 '01 was selected by Arizona Gov. Katie Hobbs in January to fill a vacancy on the Arizona Supreme Court. Cruz served on the Arizona Court of Appeals after an appointment from then-Gov. Doug Ducey in 2017. Previously, she served on the Yuma County Superior Court, where she was the presiding judge, as well as on the Cocopah Tribal Court.

Cruz, who received a bachelor's in psychology and her law degree from the U of A, has experience as both a defense attorney and prosecutor and has presided over almost every type of case seen in state court. She received overwhelming support from a bipartisan group of community leaders, including the entire Yuma County Board of Supervisors, Yuma Mayor Doug Nicholls and Yuma County Sheriff Leon Wilmot. Cruz will make history as the first Latina and the first Black Arizonan to serve on the Arizona Supreme Court.

Remembering Cedric Dempsey

Former Director of Arizona Athletics and former Executive Director of the NCAA Cedric Dempsey died on April 5, at the age of 92. Dempsey joined the U of A as an assistant athletics director in 1965, leaving for posts at Pacific, San Diego State and Houston before returning to Tucson to serve as athletics director in 1983.

Under his leadership, Arizona became a fixture in NCAA postseason play in nearly every sport, leading to five national championships, 39 individual NCAA championships and 17 Pac-10 championships, not to mention hundreds of All-American and Academic All-American players. Dempsey is also responsible for hiring some of the program's most successful and influential coaches, including Lute Olson, Dick Tomey, Mike Candrea, Joan Bonvicini, Fred Harvey, Becky Bell, Frank Busch and Dave Rubio.

He served on dozens of NCAA and Pac-10 committees and advisory groups, helping advance not just Arizona's programs but intercollegiate athletics as a whole. The Commitment to an Athlete's Total Success (or C.A.T.S.) program, which provides academic support and learning specialists to student-athletes, was named in his honor.

A cancer survivor, Dempsey held annual fundraising runs to help support research at UMC and credited the University of Arizona Cancer Center for curing him. Thanks for all you did for the Wildcat community, Dr. Dempsey.

Photo: Chris Richards

Remembering Raúl M. Grijalva

U.S. Rep. Raúl M. Grijalva '87, who served Southern Arizona in the House of Representatives for more than two decades, died March 13. He was 77.

His political career spanned more than a half century, "driven by community values and spirit," a statement from his office said. He served on the Tucson Unified School District Governing Board for 12 years beginning in 1974, then on the Pima County Board of Supervisors for 13 years, starting in 1989.

He was elected to Congress in 2002 and eventually led the House Natural Resources Committee, where he was a voice for environmental causes, people from low-income communities, the sovereignty of Native American tribes and improved access to public health. His office specifically noted his work on bills that designated the Baaj Nwaavjo I'tah Kukveni – Ancestral Footprints of the Grand Canyon National Monument and strengthened the Affordable Care Act. He eventually served 12 terms.

Grijalva was born in Pima County, the son of a father who farmed land under the Bracero Program, a partnership between the U.S. and Mexico that allowed Mexican farmers to come to the U.S. Grijalva grew up on Tucson's south side and attended Sunnyside High School.

That's likely where he learned firsthand the value of grit and determination, says Adriana Grijalva, president of the Associated Students of the University of Arizona and a relative who says she is a distant niece.

"If you're a southside kid, you've had to push hard for things you've wanted," she says, adding that his work inspired her to choose a career in public service. She is studying political science with a minor in communication.

"He always told me to reach big for my dreams, and he was definitely somebody who made a huge impact on others," she adds. "He was always about people."

Grijalva enrolled in the U of A in 1967 and was active in El Movimiento Estudiantil Chicano de Aztlán, or MEChA, a student-led national organization that advocates for Mexican American and Chicano studies programs in higher education.

He also was part of a student movement that led to the establishment of the Department of Mexican American Studies in the College of Social and Behavioral Sciences, says Anna Ochoa O'Leary, the department head.

He earned his bachelor of arts in sociology in 1987 and served for a time as assistant dean of Hispanic student affairs in the late 1980s.

Grijalva's wife, Ramona Grijalva, and his daughters, Marisa and Adelita Grijalva, are U of A alumni as well.

U of A President Suresh Garimella says Grijalva was among his first phone calls after Garimella took office in October.

"A gracious and kind man, he was a steadfast champion of the university's land-grant mission and a tireless public servant dedicated to our community, state and nation," Garimella said in a statement. "Congressman Grijalva's legacy is a testament to what it means to be a Wildcat for Life, leaving an indelible mark on Arizona and beyond and inspiring others to lead with purpose and service."

Thomas Volgy, a professor in the School of Government and Public Policy, served on the Tucson City Council from 1977 to 1987 and then as mayor until 1991, overlapping with Grijalva's time in local elected office.

"Raúl truly exemplified what it means to be in public service," Volgy says. "He dedicated his life to helping those in need, for seeking justice for those who did not enjoy the fruits of the American dream, and he worked for both social and environmental progress. He was loved by those who knew him, and in turn he made us all proud to have him as our representative. For those of us who are part of the U of A community, we can take great pride that he was one of us."

Grijalva, Adriana Grijalva says, remained an educator at heart, always staying in touch with students and eager to learn what they had planned for careers.

"I think that's something he's had since he was little," she adds. "He was always the spark to inspire others, and he wanted to be that change-maker."

His office noted that his passion was serving the planet, often telling those around him, "It's for the babies." ◆

News updates are sourced from the Office of University Communications at news.arizona.edu.

WHAT BENNU BROUGHT

Asteroid Bennu comes from a long-lost world bearing ingredients for life.
By NASA and Daniel Stolte

Zoe Zeszut, lab manager and research scientist at the University of Arizona Kuiper-Arizona Laboratory for Astromaterials Analysis, prepares a vial containing extraterrestrial sample material for analysis. Photo: Chris Richards

The solar system had the conditions to "cook up" the chemical precursor ingredients for life before Earth formed, according to two studies published by the sample analysis team of NASA's OSIRIS-REx mission led by Dante Lauretta '93 at the University of Arizona.

The OSIRIS-REx spacecraft returned a sample from asteroid Bennu in 2023. Following a year of in-depth analyses in labs across the globe, researchers concluded that these conditions and ingredients may have been common across the solar system, increasing the odds of life forming on other planets and moons.

"These samples from Bennu are an incredible discovery, showing that the building blocks of life were widespread across the early solar system," says Lauretta, Regents Professor of planetary science and cosmochemistry at the

In this microscope image of a Bennu sample, needles of hydrated sodium carbonate, a salt left by evaporating brine, appear in purple false color. Had these salts been exposed to water in Earth's atmosphere, as would be the case with a meteorite, they could easily have been compromised, underscoring the value of sample return missions like OSIRIS-REx. Rob Wardell/Tim McCoy/Smithsonian Institution; colorization: Heather Roper/University of Arizona

U of A's Lunar and Planetary Laboratory, and a coauthor on both papers.

"By studying how these ingredients interacted in environments like those on Bennu and in places inferred for the early Earth — such as salty ponds similar to those Darwin once imagined — we can better understand how life might emerge and where to search for it beyond our planet."

Bennu coalesced from a small portion of the rubble left over from a giant collision of asteroids. Preserved in the vacuum of space since the solar system's formation about 4.5 billion years ago, the samples have provided scientists with unparalleled insights into the conditions of that era.

Based on their findings, published in Nature and Nature Astronomy, the researchers share several theories about the history of Bennu and the solar system.

Bennu's molecular composition suggests the ice and organic compounds in its parent body originated in the extremely cold outermost disk of gas and dust that gave rise to the solar system.

Temperatures in the outer disk could dip to minus 400 degrees Fahrenheit, allowing volatile gases that easily evaporate in warmer conditions to accumulate and freeze — among them water vapor, carbon dioxide, methane and ammonia, which was detected in "exceptionally high" levels in the Bennu samples, according to the Nature Astronomy paper.

In the right environment, ammonia can react with formaldehyde, which was also detected in the samples, to form complex molecules such as amino acids — the building blocks of proteins. Fourteen of the 20 amino acids that life on Earth uses to make proteins are found in the Bennu sample. The research team also found all five nucleobases that life on Earth uses to encode structural information in more complex biomolecules like DNA and RNA.

"Besides pointing to the outer solar system origin of abundant ammonia in Bennu's ancestor, our work also supports the idea that objects that formed far from the sun could have been an important source of the raw ingredients for life throughout the solar system," says Danny Glavin, the senior scientist for sample return at NASA's Goddard Space Flight Center in Greenbelt, Maryland. Glavin, together with colleague Jason Dworkin, led the paper in Nature Astronomy.

With life's ingredients found in the Bennu samples, the big question is: How did these building blocks turn into the chains of molecules needed to activate biology?

"You can have all the ingredients for whatever you want to make, but you have to have the environment to make them do something," says Tim McCoy, curator of meteorites at the Smithsonian National Museum of Natural History in Washington, D.C.

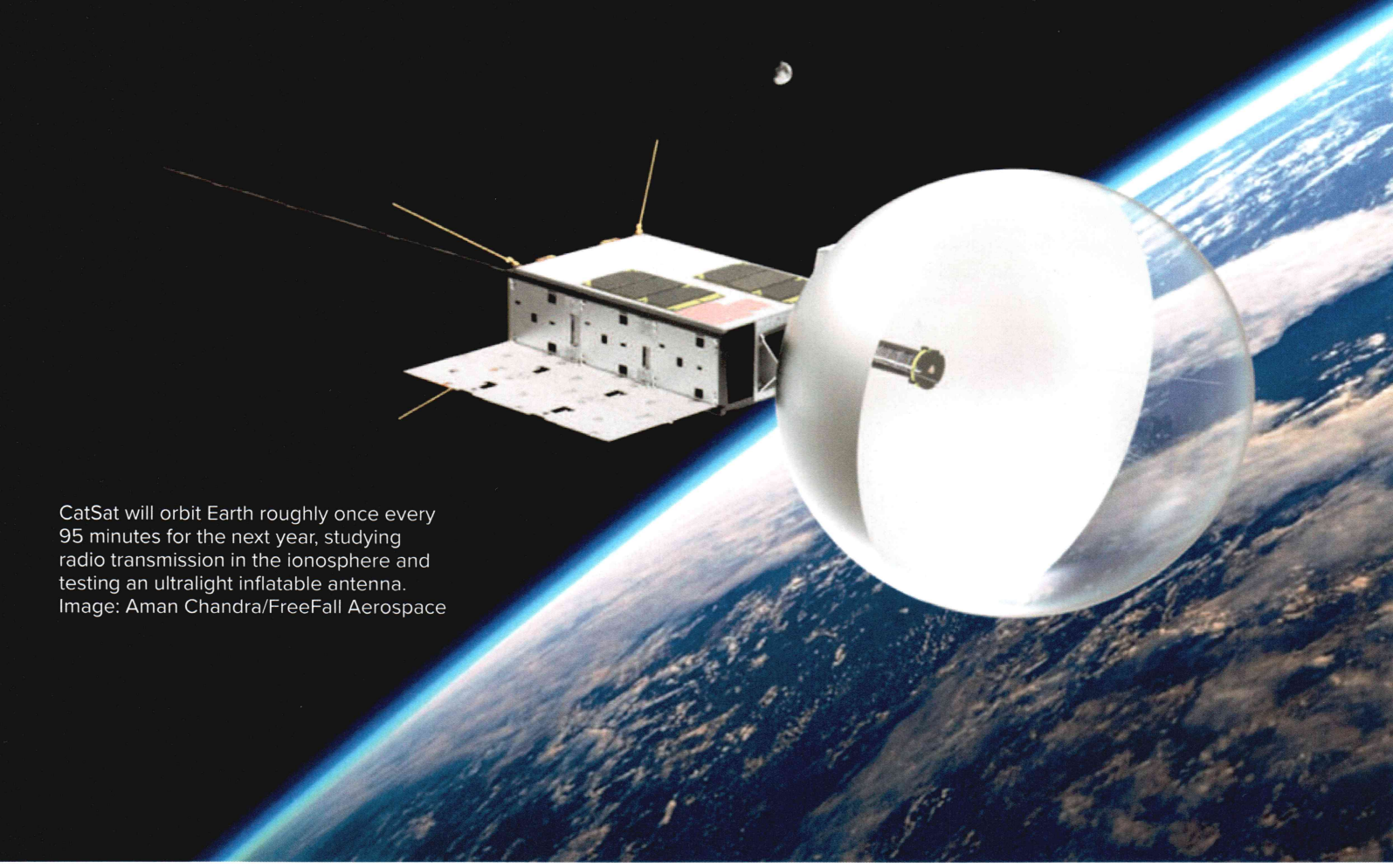
Along with Sara Russell of the Natural History Museum in London, McCoy co-led 66 scientists from four continents in a study of minerals in the Bennu samples. In the Nature paper, they describe evidence of an ancient environment well suited to kickstart the chemistry of life.

Ranging from calcite to halite and sylvite, scientists identified 11 minerals that make up a complete set of "evaporites" from a brine, or salt-saturated water. These evaporites form as water containing dissolved salts evaporates over long periods, leaving behind the salts as solid crystals.

"We're seeing minerals in Bennu samples that we have never seen before in a meteorite or any extraterrestrial sample," McCoy says.

Finding evaporites indicates that the interior of Bennu's ancestor was warm enough to support liquid water for a substantial period. Liquid water is necessary for life, as it facilitates its essential chemical reactions, while salts can prevent water from freezing. Salts also help concentrate simple molecules, making it easier for them to combine into the complex compounds life depends on.

While several evaporites have been reported from meteorite samples, the Bennu sample represents the first time researchers have seen a complete set preserving an evaporation process that could have lasted thousands of years or more. This process happens in basins of water on Earth, including drying lakes and shallow seas. The researchers deem it possible that on Bennu's ancestor, water could have existed in underground pockets or veins, but not on the surface, as it would have quickly boiled away due to lack of atmospheric pressure. ◆



CatSat will orbit Earth roughly once every 95 minutes for the next year, studying radio transmission in the ionosphere and testing an ultralight inflatable antenna. Image: Aman Chandra/FreeFall Aerospace

CATSAT IN ORBIT

Students at the U of A built a satellite. NASA put it into space. By Alexandra Pere in collaboration with the Arizona Daily Star

Shae Henley '24 breathed a sigh of relief when CatSat finally sent signals back to Tucson last summer. She has worked on the student-built satellite since her first year as a University of Arizona undergrad.

Working on the project "has been the most helpful thing at the university," says Henley, who is now an aerospace engineering master's student. "Classes give you a solid math and physics background but not necessarily hands-on experience."

The mission is part of NASA's CubeSat Launch Initiative, which fosters growth in the small-sat industry. U of A tech spinoff FreeFall Aerospace and Tucson-based Rincon Research are partners on the project.

CatSat left Earth onboard the Firefly Aerospace Alpha rocket as Henley and others watched the rocket's plume streak across the Tucson sky. U.S. Space Force tracking accounted for seven of the eight nanosatellites scheduled for deployment from the spacecraft. But not a sound from CatSat.

Henley and the team of a dozen or so undergrads and grad students who had built CatSat for over four years listened for signals, but heard nothing. Finally, two weeks later, the team began receiving telemetry data, and Firefly confirmed the satellite's deployment.

Since then, the team has tracked the satellite as it passes over Tucson — twice in the morning and twice at night — observing what it can do and sending photo commands.

"With the pictures, we are troubleshooting — making sure we're pointing in the correct direction and that our frames are good for future data recordings," says supervisor Adrien Bouskela, an aerospace graduate student and altitude and orbital control systems lead. "It is nice to have a mission that is by students, for students, because everyone is learning and transmitting knowledge."

Now, the students will begin collecting data from the atmosphere's ionospheric layer, which is used by radio enthusiasts to broadcast information throughout the world, with hopes that the research will yield improvements for radio transmissions. They also will test an inflatable antenna that is expected to dramatically increase the total data return, including high-definition imagery, and the overall effectiveness of CubeSats and other small satellites. ◆

TAKING CARE

The INCATS program is helping Native students attend nursing school and bring care back to their communities. By Tim Vanderpool

'There's a sense of comfort and of trust there. People in tribal communities light up when they're treated by other Native Americans.'

Emily Si'al, a citizen of the Tlingit and Haida Nations of Southeast Alaska, understands the challenges Native American communities face in accessing quality health care. She has seen firsthand how patients often travel long distances for basic care, manage chronic illnesses with rotating providers, and struggle with cultural barriers in systems unfamiliar with their way of life.

Now, as the research program coordinator for the University of Arizona's Indians in Nursing: Career Advancement and Transition Scholars Program (INCATS), Si'al is working to change that.

INCATS empowers Native American nurses to serve their communities while creating new career pathways for Indigenous youth. The program also addresses the national nursing shortage and the underrepresentation of Native professionals in the field — Native Americans and Alaska Natives make up just 0.4% of the nursing workforce.

Si'al emphasizes the impact of culturally connected care. "There's a sense of comfort and of trust there — an understanding of cultural practices and a shared experience and history, both of the historical trauma and of resilience." She adds, "People in tribal communities light up when they're treated by other Native Americans."

Since its launch in 2019, INCATS has graduated 10 nurses who are now working in tribal communities — including the Navajo and Tohono O'odham Nations — where they play a vital role in improving health outcomes and building long-term relationships.

Unlike many temporary providers, INCATS-trained nurses remain embedded in the communities they serve. "A lot of those communities are on islands," says Si'al, speaking about rural southeast Alaska. "It's hard to get to health care. Then the providers who do come might be there for six months or a year, and then they're gone." The same pattern is seen in rural areas of Arizona.

The program is designed to remove barriers to education and retention. Students receive full tuition coverage, living stipends, mentorship, tutoring and professional development. Many begin their coursework at community colleges before transferring to the University of Arizona, helping reduce costs and support success.

This long-term, culturally grounded approach aims to improve outcomes in Indigenous communities, which continue to experience disproportionate rates of preventable illness. According to the Indian Health Service, Native Americans have a life expectancy 4.4 years lower than the general U.S. population and face significantly higher mortality rates from chronic diseases like cirrhosis, diabetes, and cancer.

Si'al believes Indigenous providers are uniquely positioned to lead change. "Much of the disparity stems from the disruption of traditional Indigenous health systems, which are grounded in community, culture, spirituality, and traditional foods," she says. "Loss of traditional Indigenous ways of life is part of the underlying problem; reclaiming those ways offers an evidence-based solution to our current health crises."

And for the next generation, representation matters. "Many have told us they've never encountered a Native doctor or nurse before," Si'al says. "Or they didn't have family members who went to college, so they never imagined it was possible for them. Seeing others overcome similar barriers is inspiring." ◆

Above: Traditional healer and counselor Miguel Flores gives a blessing at an INCATS summit. Photo: INCATS

PRESERVING HAND TALK

A Native scholar has a mission to revitalize Indigenous sign languages. By Kyle Mittan

Melanie McKay-Cody gives a modernized sign for "Indigenous," which she helped create in 2012 by blending the Plains Indian Sign Language signs for "Native" and "Native land" with the American Sign Language sign for "root."
Photo: Chris Richards

Melanie McKay-Cody's passion for language began at just 10 years old when she discovered a book on Native American sign languages at the Oklahoma School for the Deaf. The signs looked different from the American Sign Language she used, sparking a lifelong fascination with her own Native heritage.

Now an assistant professor in the University of Arizona's College of Education, McKay-Cody is one of the world's leading experts on North American Indian Sign Language — a vast, ancient network of sign languages she is dedicated to documenting, preserving and revitalizing.

Born in southeastern Oklahoma, McKay-Cody lost her hearing at age 5 due to spinal meningitis. Her family moved to be near the Oklahoma School for the Deaf, where she became fluent in ASL within a month. While her mother and sister picked up some signs, her father and brother used their own gestures to communicate.

"Back in those days, parents didn't often sign," McKay-Cody says. "You have to remember, this is the 1960s, when parents weren't really educated about communication and engagement with their children the same way that we are now."

McKay-Cody grew up learning about her paternal Cherokee heritage, and in high school she began digging deeper, finding lineage on her mother's side to nine tribes in the eastern U.S., including the Shawnee Tribe, the Powhatan, the Montauk, the Narragansett and the Pequot.

"I became interested and got involved with older deaf folks who would tell their stories," she says. "That got me interested in history, and I fell in love with it."

At Gallaudet University, McKay-Cody studied museum studies, art history and the American West while working in the National Archives as well as Gallaudet's archives, where she discovered historical records on Native sign languages. She took them home and pored over them, knocking dust off the pages as she read.

After graduating in the late 1980s, she took a research role in Santa Fe, cataloging and cleaning artifacts for an anthropology lab. While analyzing Puebloan petroglyphs, she recognized similarities to Native hand signs from her research, sensing a deeper form of communication. "I knew there was something there," she says. "I just needed the training to understand it."

Her training continued at the U of A, where she earned a master's in sign language studies in 1996. Her research has since helped map the vast network of Indigenous sign languages across North America, collectively known as North American Indian Sign Language, with some referred to as Hand Talk.

Her 1996 dissertation focused on Plains Indian Sign Language, documenting regional differences shaped by environment and culture. She says that sometimes one group will correct her signs, informing her that they belong to another tribe. "So, that's a moment where I document the differences between the two tribes' sign languages."

'I became interested and got involved with older deaf folks who would tell their stories. That got me interested in history, and I fell in love with it.'

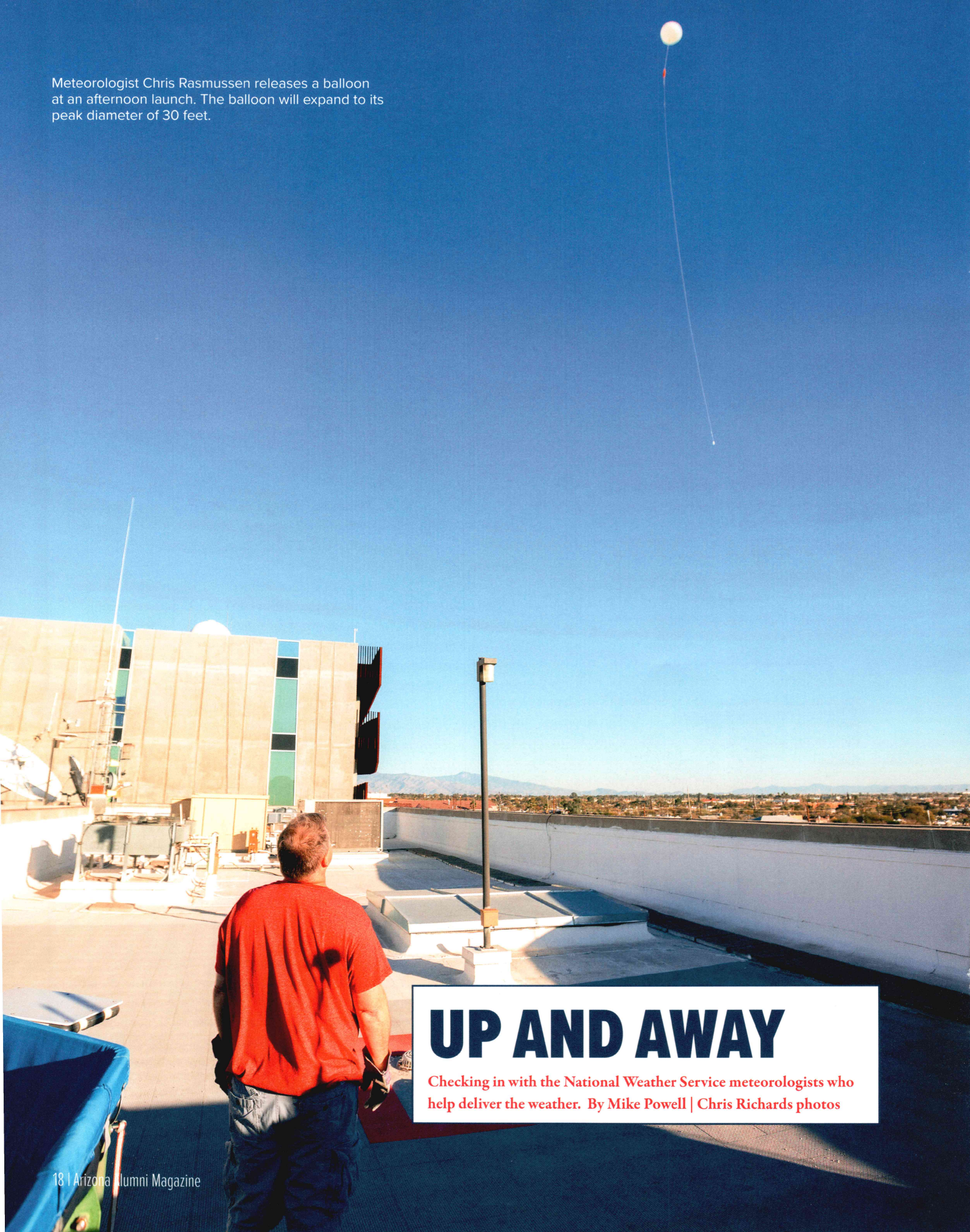
McKay-Cody later earned a second master's in linguistic anthropology from the University of Kansas. She also earned a doctoral degree in sociocultural and linguistic anthropology from the University of Oklahoma.

Decades of research confirmed what she had long suspected — some Puebloan petroglyphs corresponded to Indigenous hand signs. As a Deaf person and Native signer, she could make the connections: A horizontal line across a figure's torso matched the sign for "hungry," while a line with a half-circle resembled the sign for "water."

McKay-Cody has come a long way since discovering that library book at age 10. "Back then, if somebody had told me, 'You're going to go on to a Ph.D. and travel the world and do research,' I never would have believed them," she says. "That little 10-year-old me could never have imagined where I would be today."

As one of the few researchers documenting Indigenous sign languages, she is leading the creation of a video dictionary with Native signers, preserving 900 terms across 13 tribal languages. Stored by University Libraries, the dictionary includes English translations, video demonstrations and detailed explanations. She collaborates with 15 tribes to ensure accuracy and cultural integrity.

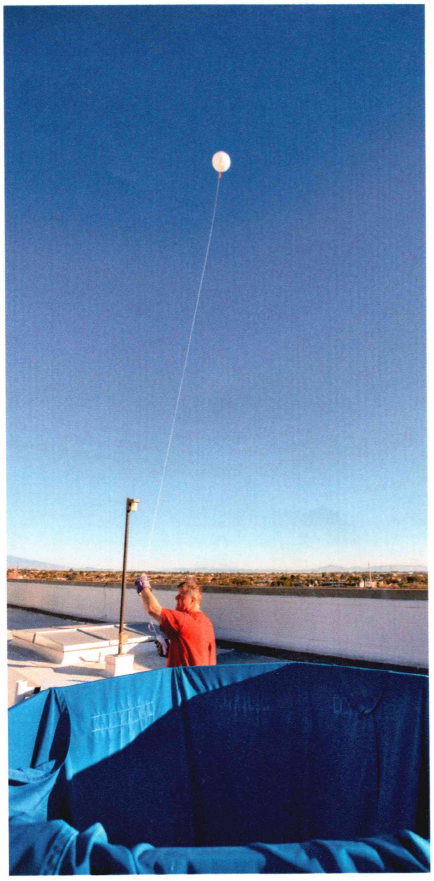
While some entries may be public, access to others will be restricted to tribal members, safeguarding Indigenous ownership. "The language belongs to Native people," McKay-Cody says. "Native people are afraid of their language, of their Hand Talk, being polluted by ASL. So, a goal for the dictionary is to make sure that those tribes who have been involved in the research will have access to it." ◆

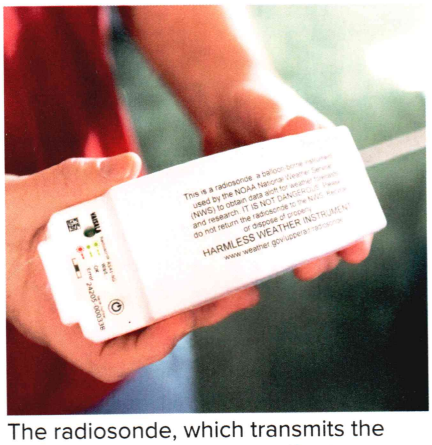


Meteorologist Chris Rasmussen releases a balloon at an afternoon launch. The balloon will expand to its peak diameter of 30 feet.

UP AND AWAY

Checking in with the National Weather Service meteorologists who help deliver the weather. By Mike Powell | Chris Richards photos





The radiosonde, which transmits the balloon's readings back to Earth

Every day at 4 a.m. and 4 p.m., a meteorologist from the National Weather Service walks up a narrow staircase to the roof of a building at the edge of the University of Arizona campus and releases a balloon into the sky. Attached to the end of the balloon is a length of string about 100 feet long, and attached to that string is a small transmitting device called a radiosonde, which measures four key weather metrics: temperature, relative humidity, wind and air pressure. It looks like a little white mouse with metal whiskers.

When the balloon gets high enough, it pops, and the radiosonde comes floating back to Earth under a small orange parachute. "You don't want to have somebody walking their dog and all of a sudden get hit by [something] coming down at terminal velocity," says meteorologist Chris Rasmussen '96. "Yeah, that's bad. That's bad."

But should you be walking your dog and see a radiosonde come drifting in from out of the sky, you would know it in part by the marking on its back: HARMLESS WEATHER INSTRUMENT. By the time the balloon pops, it has been traveling for approximately two hours, reached a height nearly three times most commercial plane flights and expanded to a diameter of nearly 30 feet, all the while relaying to scientists on the ground the data that makes up what most of us call "the weather."

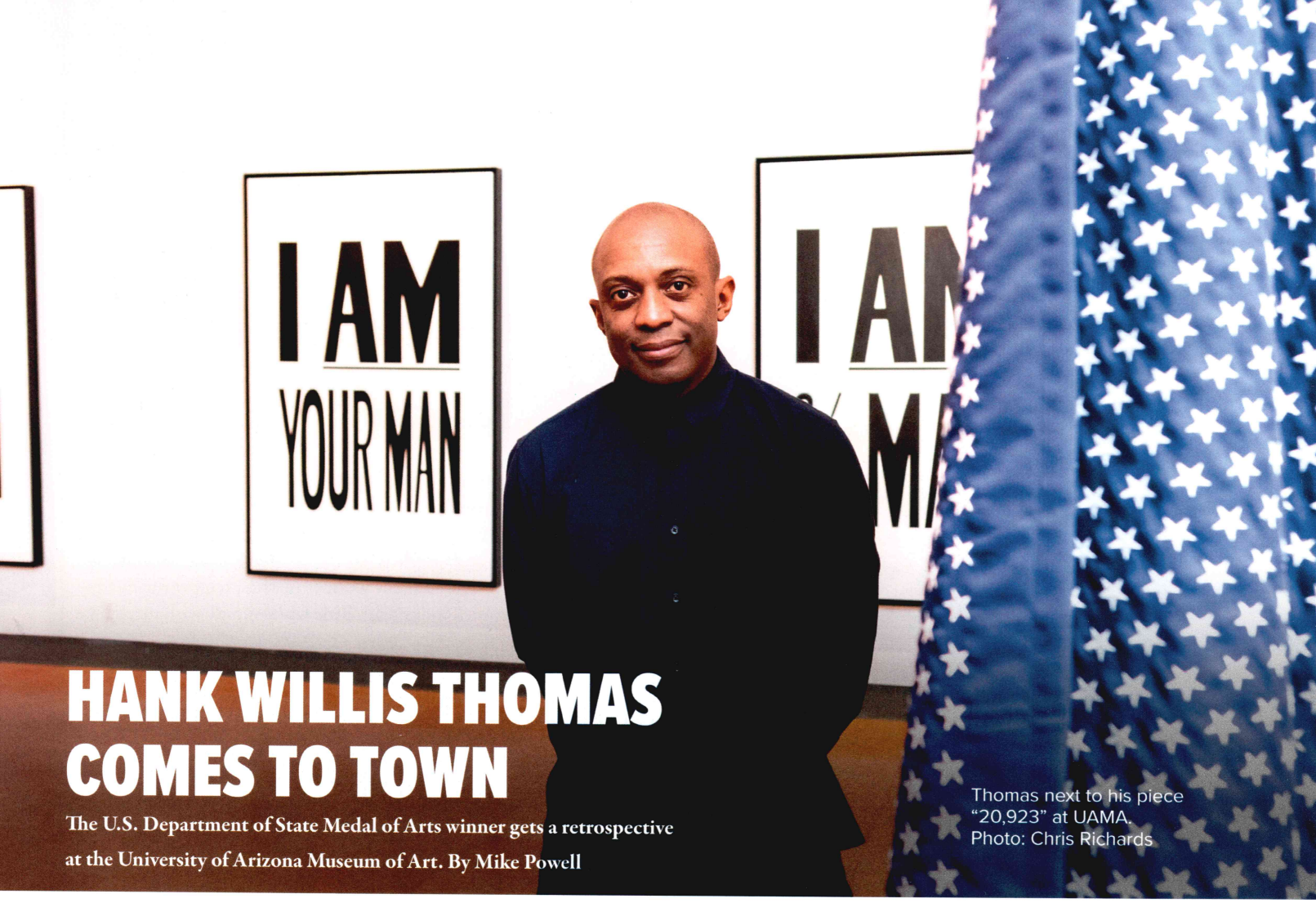
This is done on approximately 92 rooftops across the United States and affiliated territories per day, at a cost of $4 per citizen per year. (The Tucson NWS office is one of several colocated with universities in an effort to promote research and collaboration.) Ninety-two balloons going up at roughly the same time, 92 strings and parachutes, 92 instances of a person briefly leaving their cubicle and slipping into a different kind of time.

"It kind of goes back to your own childhood," Rasmussen says. "You're filling up a balloon and you're letting it go and you're watching it go up. That level of excitement is actually kind of what you get by doing the balloon release every day. It's a very simple process."

Time and technological advances have made the process easier, Rasmussen says, but it still retains the patient, analog quality of old-school science: The string used is not any mysterious kind of string, and when Rasmussen lays it out on the rooftop, he does so in an M shape, so it doesn't get wrapped around his feet. (He also has to look both ways for plane traffic to and from Davis-Monthan Air Force Base.)

Anyone who has lived anywhere for any amount of time will agree that the weather is not predictable. What is predictable, at least for now, is a twice-daily ritual of offering a strange piece of machinery to the sky in an effort to understand our condition just a little bit better.

"I'm usually just kind of a go-with-the-flow kind of guy," Rasmussen says. "Except for a balloon release. You do it the same way every time, and you won't make a mistake." Right. Leave the going-with-the-flow to the balloon, which is now leaving the ground and growing smaller by the second, a white dot in an embrace of blue. ◆



HANK WILLIS THOMAS COMES TO TOWN

The U.S. Department of State Medal of Arts winner gets a retrospective at the University of Arizona Museum of Art. By Mike Powell

Thomas next to his piece "20,923" at UAMA. Photo: Chris Richards

On Feb. 2, 2000, a young man named Songha Willis Thomas was shot and killed outside a nightclub in Philadelphia. He was visiting his grandmother, had gone out with some friends, got robbed, got killed. Songha ended up being one of nearly 11,000 gun homicides in America that year; the number of deaths more than doubles if you count suicide.

"My life goal was to be his background dancer," his cousin, the artist Hank Willis Thomas, says during a talk at the University of Arizona Museum of Art 25 years later. A joke, but also not. Songha was good at everything, Thomas says. "And so, I was like, 'OK, I'll just stand behind him and I'll be fine.'"

Thomas is discussing a piece of his called "20,923" (2021), a long, dark-blue flag studded with 20,923 white stars, one for each American life lost to gun violence in 2021. The flag is, of course, a variation on the American flag; the stars, a metaphorical representation of a lost loved one: a star in a brother or mother or father or cousin's sky.

"20,923" is one of 90 pieces in a 20-year-retrospective called "LOVERULES," which came to the U of A Museum of Art from the Henry Art Gallery at the University of Washington in Seattle and will be on display through June 21. Other work includes a series called "Unbranded," in which Thomas digitally removed language and logos from advertisements to highlight the way Black Americans are represented in media, and a series of text-based images that twist the famous "I AM A MAN" signs held up by workers during the 1968 Memphis sanitation workers' strike.

Like a lot of work in the show, the flag trades on simple, familiar imagery to pose frank questions about the American experience. When Songha was killed in 2000, for example, Thomas says he wondered why we had public memorials for Americans who died in the Vietnam and Korean wars, but none for the victims of an epidemic that has taken vastly more American lives.

The work eventually led Thomas to help found a group called For Freedoms — a play on Norman Rockwell's painting series "Four Freedoms" — that uses billboards and public art to stimulate civic discourse and engagement. He has also made a 20-foot bronze sculpture on Boston Common inspired by the embrace shared between the Rev. Martin Luther King Jr. and Coretta Scott King after he won the Nobel Peace Prize in 1964.

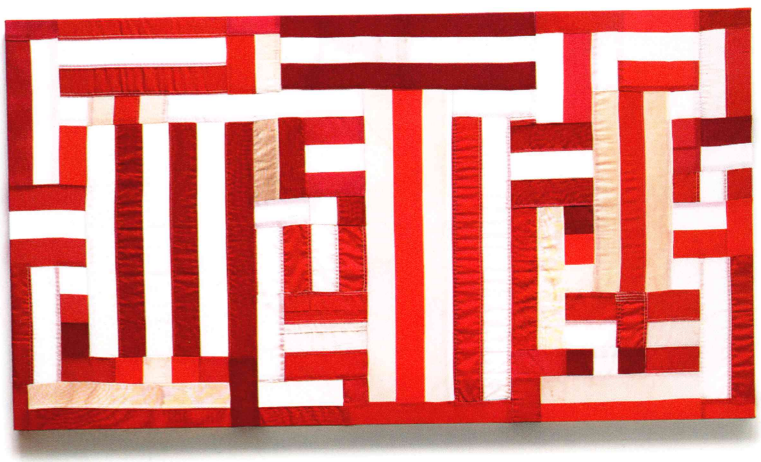
Toward the end of the tour, Thomas shows us a black-and-white image of a man on crutches in a line of people marching. The people seem to float against an otherwise blank background. The image was originally taken by the

Clockwise from left: "Farewell Uncle Tom" by Hank Willis Thomas (Courtesy of the Jordan Schnitzer Family Foundation; photo: Aaron Wessling Photography)

"You'll never guess our deep, dark, delicious secret" by Hank Willis Thomas (Courtesy of the Jordan Schnitzer Family Foundation; photo: Aaron Wessling Photography)

"Justice" by Hank Willis Thomas (Collection of Jordan D. Schnitzer; photo: Aaron Wessling Photography; Courtesy of the Jordan Schnitzer Family Foundation)

"Jungle Fever" by Hank Willis Thomas (Courtesy of the Jordan Schnitzer Family Foundation; photo: Aaron Wessling Photography)



Thomas among his works at UAMA.
Photo: Chris Richards

"Love Over Rules" by Hank Willis Thomas (Courtesy of the Jordan Schnitzer Family Foundation; photo: Aaron Wessling Photography)

Above: "From Cain't See in the Morning 'till Cain't See at Night" by Hank Willis Thomas (Courtesy of the Jordan Schnitzer Family Foundation; photo: Aaron Wessling Photography)

A couple at the "LOVERULES" opening at the U of A Museum of Art. Photo: Chris Richards

photographer Spider Martin and later treated by Thomas with a process called a sugar lift, which allowed him to wash the background out.

These were some of the people who marched with King from Selma, Alabama, to Montgomery in support of civil rights in March 1965. The man on crutches was named Jim Letherer. He'd lost one of his legs to cancer as a child. He made the entirety of the 54-mile march on those crutches. In 1985, he celebrated the 20th anniversary of the march by doing it again.

In Thomas's eyes, photography was crucial to helping America understand what people like Letherer were marching for: images of nonviolent resistance and violent reaction, images of Black people and white people, like Letherer, working together. In recognizing that his fellow citizens were not being given equal rights, Thomas says, Letherer realized his rights were in danger of being infringed upon, too.

Thomas, who was elected to the American Academy of Arts & Sciences in 2022 and given a Medal of Arts from the U.S. Department of State in 2023, concludes with hope: "I hope that each of us gets an opportunity to use our witnessing, whether it's through the art we make or the stories we tell, not to demonize other people, but to encourage people to step in and support people they don't necessarily know or understand or relate to. Because we would want them to do that for us." ◆

KEEPING YUMA CONNECTED

How innovations in infrastructure are helping an agricultural powerhouse face the future.

By Leslie Hawthorne Klingler and Elena Lopez
Leslie Hawthorne Klingler photos

Yuma's agriculture is a powerhouse, feeding the nation and fueling the economy.

Known as the Winter Salad Bowl, it supplies 90% of the country's leafy greens from November to March and ranks first in Arizona for vegetable production. A new economic impact study shows Yuma's agriculture and agribusiness contributed $4.4 billion to Arizona's economy in 2022, with $3.9 billion staying in Yuma County.

The University of Arizona supports the industry through research and education at its Yuma-based facilities and six agriculture-related degree programs.

"Yuma is a dynamic place with sophisticated agricultural operations that play a key role in winter vegetable supply chains at the national level," says Dari Duval, an economic impact analyst with the U of A Cooperative Extension and Department of Agricultural & Resource Economics in the U of A College of Agriculture, Life and Environmental Sciences. "Agribusiness in Yuma goes far beyond on-farm production to include operations providing inputs, specialized services and carefully coordinated post-harvest activities."

Driving this success is innovation. U of A research is advancing the use of technology in farming and agribusiness, helping farmers improve yields and adapt to changing environmental conditions. By collecting and monitoring field data, producers can better plan and assess crop growth, ensuring Yuma remains a leader in agricultural production.

Internet-connected devices have revolutionized agriculture by enabling real-time monitoring and precision management of crops, livestock and equipment. From soil moisture sensors for irrigation to drones that monitor crop health from above to laser weeders that use artificial intelligence, these connected devices provide farmers with valuable data to improve efficiency.

Combined with Yuma's innovative arid-land crop production practices, such devices can be crucial for sustainability research. However, until recently — despite the area's global importance and economic potential — the region faced challenges with connectivity and internet access, which is crucial for education, economic development and agriculture.

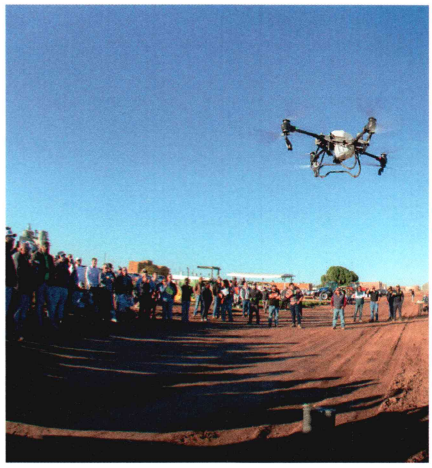
Now, thanks to a subaward from the National Science Foundation's Campus Cyberinfrastructure program, Yuma growers have access to 10G fiber broadband. The project helped position Yuma as a key center for precision agriculture and arid-environment sustainability.

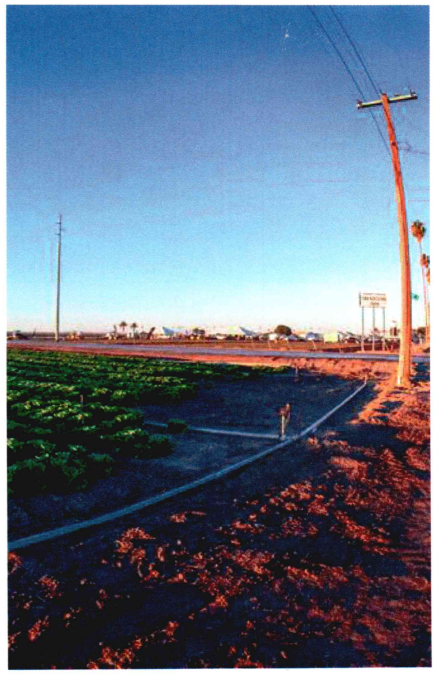
"Yuma is the agriculture powerhouse for leafy greens for the nation, but we were not able to convince these big internet service providers to come out, so we were hampered by the limitations of the network that we had," says Matt Rahr, director of the Cyber Experiment Station. "Enter the Sun Corridor Network, which looked at this from a research and education angle, and here we are bringing true fiber technology to the farm."

The Campus Cyberinfrastructure program invests in projects that help overcome disparities in connectivity associated with geographical location. Partnered with the Sun Corridor Network, the initiative helped deliver high-speed external connectivity, wireless networks and Internet of Things systems to the Yuma Agricultural Center within the Arizona Experiment Station, the University of Arizona Yuma, Arizona Western College and the Yuma Union High School District.

Recognizing the need for internet infrastructure, the team set out to bridge the connectivity gap in Yuma. They implemented a three-tier service system including Wi-Fi, a wireless broadband service for cellular data and a low-power, wide-area networking service that allows battery- and solar-operated devices to connect to the internet. This all-encompassing approach ensures that Yuma now receives high-speed internet.

"Now there is a location to come and test, train for and showcase agricultural technology, so when the technology is ready to go to the farmer it is ready to be implemented," says Tanya Hodges,





executive director of the Yuma Center of Excellence for Desert Agriculture. "The big goal is for all of Yuma to integrate smart-farm capabilities, and this is one piece of that puzzle."

The goal is for improved connectivity to extend beyond research farming to everyday agricultural operations. As high-speed internet becomes more widespread, the use of internet-connected technologies in farming practices can grow, enabling more precise, tech-driven agricultural methods.

Driving Innovation

The Desert Difference AgTech Conference in Yuma this past November brought together a diverse audience to shape the future of agriculture in arid regions. Growers, researchers, industry leaders and government and nonprofit representatives gathered to explore innovations transforming desert farming.

The conference showcased cutting-edge advancements in precision planting, irrigation, crop thinning and automation for harvesting and weed management. Field demonstrations at the U of A's Agricultural Research Center highlighted how data-driven decision-making is transforming agriculture while also revealing challenges such as high costs and adaptation hurdles. Experts emphasized the economic impact of agricultural technology, particularly for rural communities.

"The integration of AgTech into Arizona's farming systems is not just about innovation; it's about creating lasting economic growth, particularly for rural communities," said Jamie Kerr, vice president of rural economic development at the Arizona Commerce Authority.

Panel discussions explored the future of smart farming, addressing issues like water scarcity, labor shortages and rural broadband limitations. Speakers examined how regulations in Arizona and California shape the adoption of agricultural technology and the need for policies that balance innovation with sustainability.

Speakers also reinforced the importance of international collaboration in tackling agricultural challenges. The conference concluded with a focus on smart farm integration, emphasizing the need for partnerships, adaptability and a commitment to equity in advancing agricultural technology.

"Transformative solutions in agriculture don't happen in isolation or just with fancy technologies," says Hodges. "They require everyone involved to come together and solve truly complex challenges."

Yuma Economic Impact Study

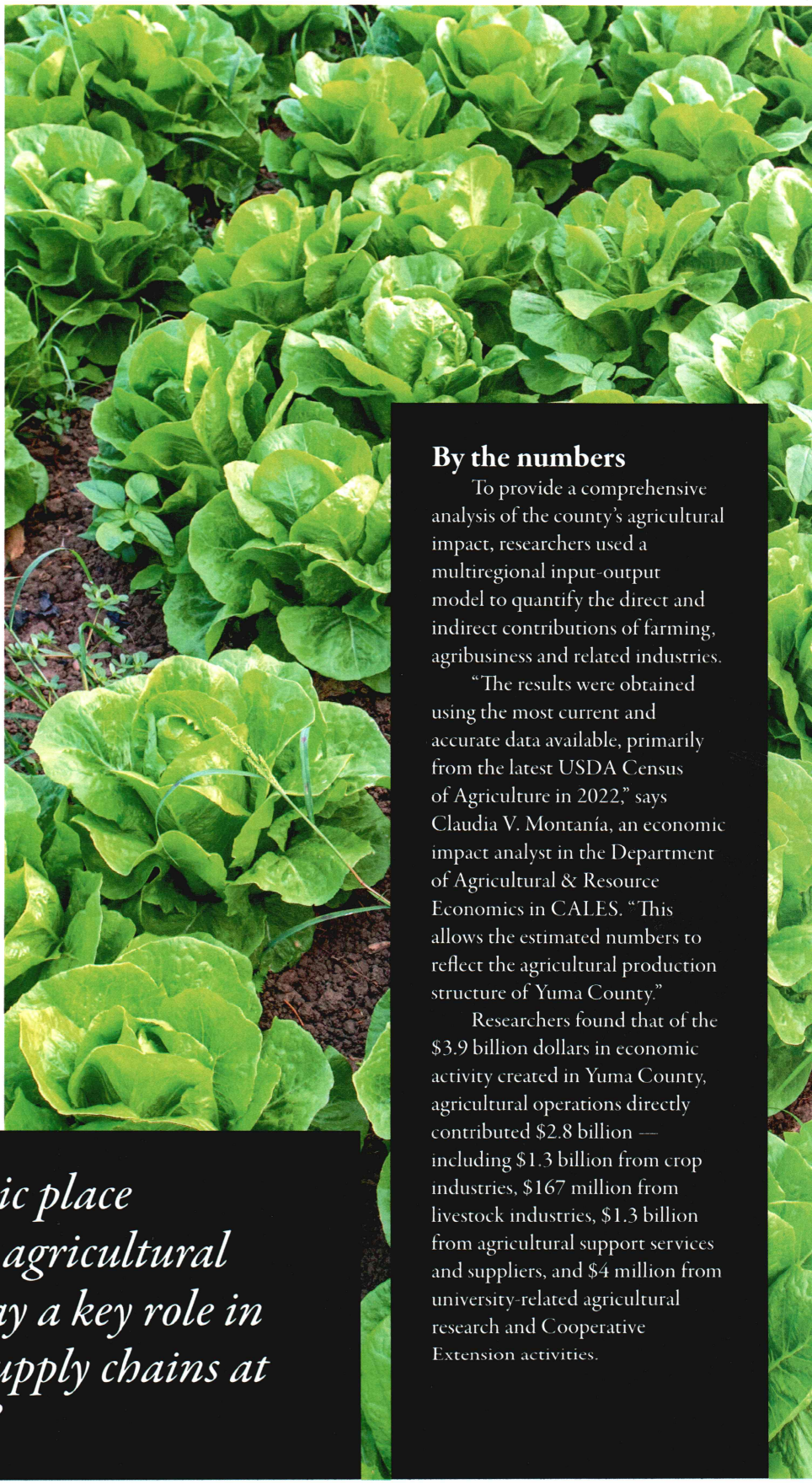
Researchers have found that produce grown in Yuma generates a whopping $3.2 billion in retail value, ranking the county third nationwide in sales of vegetables and melons.

The economic impact report also found that for every $1,000 of vegetables sold, less than one acre-foot of water — enough to cover one acre of land to a depth of one foot — was used.

"There's this concern about how much water is being used and if it's being used efficiently," says George Frisvold, who led the study and is a professor in the Department of Agricultural & Resource Economics in CALES. "In Yuma, they use 0.63 acre-feet to produce $1,000 worth of crops — compared to the rest of the Colorado Basin, where the average amount used is 1.44 acre-feet to produce a similar value."

The report places Yuma among the nation's major agricultural producers, with vegetable farmers being 58 times more concentrated in the county than the national average. That density surpasses many specialized hubs, including Detroit's vehicle manufacturing sector.

"The study findings provide a very important resource for planning and decision-making," says José Quintero, an agricultural enterprise analyst in the Department of Agricultural & Resource Economics in CALES. ◆



'Yuma is a dynamic place with sophisticated agricultural operations that play a key role in winter vegetable supply chains at the national level.'

By the numbers

To provide a comprehensive analysis of the county's agricultural impact, researchers used a multiregional input-output model to quantify the direct and indirect contributions of farming, agribusiness and related industries.

"The results were obtained using the most current and accurate data available, primarily from the latest USDA Census of Agriculture in 2022," says Claudia V. Montanía, an economic impact analyst in the Department of Agricultural & Resource Economics in CALES. "This allows the estimated numbers to reflect the agricultural production structure of Yuma County."

Researchers found that of the $3.9 billion dollars in economic activity created in Yuma County, agricultural operations directly contributed $2.8 billion — including $1.3 billion from crop industries, $167 million from livestock industries, $1.3 billion from agricultural support services and suppliers, and $4 million from university-related agricultural research and Cooperative Extension activities.

Jim and Pat Gerleman
Photo provided by Pat Gerleman

SEEING IT THROUGH

A major gift with an extraordinary arc comes to the College of Medicine – Tucson.
By Mike Powell

Pat Gerleman remembers the day her husband Jim paid his back rent to his brother, John '62. Jim had been living with John in his apartment in San Francisco while going to college, first at the City College of San Francisco, then San Francisco State and Golden Gate University for his MBA. No scholarships, no family money, just patching jobs together to cover tuition.

The deal was that Jim wouldn't pay rent until he finished school and found work. No paperwork, of course — just a promise between brothers. That happened. And sure enough, Jim showed up on John's doorstep with a check in hand. "It was quite unbelievable to me," Pat says. "It just struck me how honest and hardworking they both were."

It's that sense of honesty and commitment that nearly 50 years later has led Pat to shepherd a gift of $14.2 million to support scholarships at the College of Medicine – Tucson in the brothers' honor — money built over years of modest investments made with extraordinary foresight, including in Apple and Google, passed from John to Jim, then from Jim to Pat.

To understand this a little better, let's go back to Olpe. ("O, L, P, E," Pat says.) Tiny city in Kansas. When John was born in 1938, Olpe had a population of about 350 people; by the time Jim was born 11 years later, it had dropped slightly. John and Jim were two of nine boys — John, number five; Jim, the baby, number nine — raised in a two-bedroom house that didn't have an indoor bathroom until Jim was in high school. People in town referred to the boys as the "Gerleman baseball team."

Pat remembers seeing it, Olpe. "It was so moving, in the sense that, 'Wow, this is America.'"

Time passed and the team scattered. Some went into the military or worked at the slaughterhouse; others, like John and Jim, moved on to college and city life. (The boys' mother, Loretta, had two sisters living in Tucson. Pat thinks this

Gerleman with COM – T scholarship recipients at U of A Match Day in March, announcing her $14.2M gift for COM – T scholarships; JP Roczniak and Pat Gerleman; Gerleman with her family and U of A President Suresh Garimella. Photos: Chris Richards

is how John ended up at the University of Arizona.) John went on to work as an accountant. Jim spent more than 25 years at California Savings & Loan, which is where he met Pat.

One year, everyone convened back in Kansas for a visit. One of the Gerleman nephews had become a doctor and put together a presentation for his uncles about high blood pressure, which several of the brothers struggled with. Some waved it away ("'I don't go to doctors,' blah blah blah," Pat says). John and Jim took it to heart.

That, Pat thinks, is when John got the idea: What if he could take this money he'd been building and give it to people — people like his nephew — committing their lives to medicine in hopes that these issues might one day be solved?

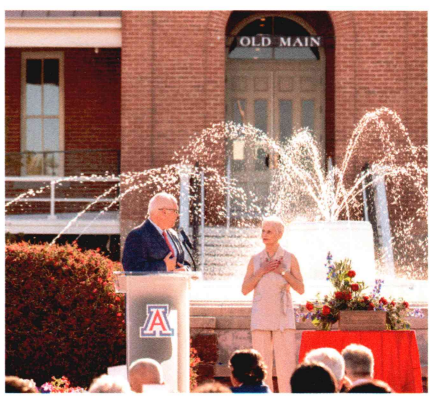
Like the rent all those years earlier, the plan was simple: John made sure his nieces and nephews got their education paid for, then asked Jim to make sure whatever was left over went to scholarships for incoming medical students at the University of Arizona. No strings, no attenuating formalities. "John trusted Jim unquestionably," Pat says.

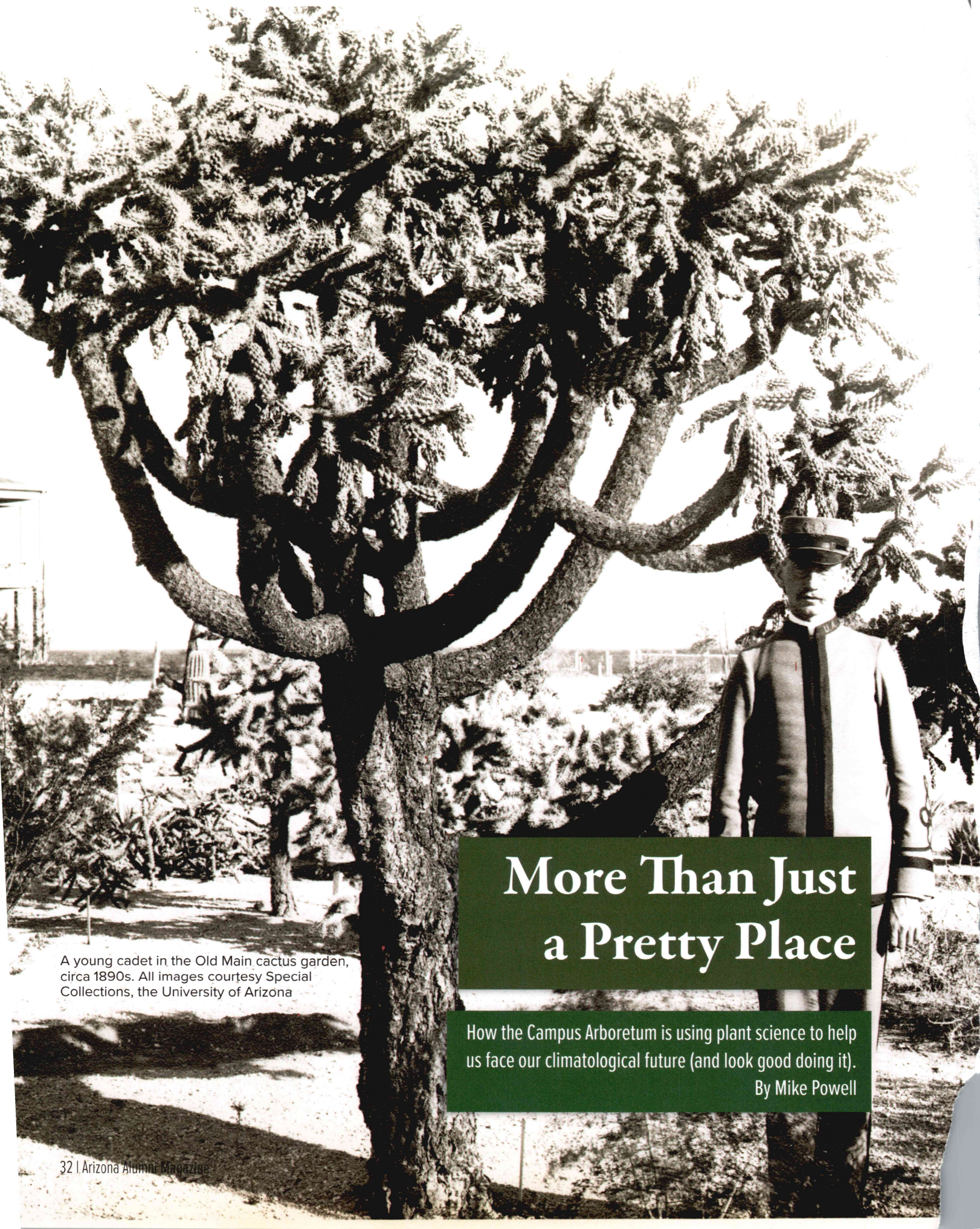
John passed away in 2008. Jim grew the investment until his death in 2023, at which point, Pat reached out to the university. She was struck by the Pre-Medical Admissions Pathway Program at COM – T, which awards scholarships to students from underserved or underrepresented communities who commit to serving their communities for a year in a primary-care setting. But she also considers it a privilege to take the burden off anyone studying medicine to do good.

"I think it's horrible to have doctors come out of medical school owing hundreds of thousands of dollars," she says. "And then, you know, how do you get those doctors helping the people that need it most when they have to work to pay back all that money?"

In some ways, though, Pat doesn't have to think about it at all, only carry out the promise that she made to Jim and Jim made to John. "This gift is not a small portion of a large estate," she says. "It is a sum of years of hard work and of lives without luxury."

"Two people made a decision, and look what's going to happen," she says. "I'm just very, very proud of my husband and his brother." ◆





A young cadet in the Old Main cactus garden, circa 1890s. All images courtesy Special Collections, the University of Arizona

More Than Just a Pretty Place

How the Campus Arboretum is using plant science to help us face our climatological future (and look good doing it).

By Mike Powell

Stand anywhere on the University of Arizona campus and look around: What do you see?

The arboretum is everything on campus that grows, from the humble bushes and understory plants that line the shady sides of buildings to the trees at the edges of parking lots to the carefully curated coral garden on the Mall outside the Student Union Memorial Center.

Buildings, sky, trees. Some of those trees, like the white floss silk tree on the south side of the Engineering Building, are distinguished and eccentric. Others, like the young sycamores in the Student Success District behind Bear Down Gym, fade into the scenery. All of them are part of a history of discovery and experimentation dating back to before Arizona's statehood we now call the Campus Arboretum.

The arboretum is not a specific place. It is not a garden or a greenhouse or a museum. You cannot take the arboretum in like a play or cover it in an afternoon. Instead, the arboretum is everything on campus that grows, from the humble bushes and understory plants that line the shady sides of buildings to the trees at the edges of parking lots to the carefully curated coral garden on the Mall outside the Student Union Memorial Center. It is a collection, a conversation with the land, the climate, the past and — most importantly — the future.

"I like to tell this story about one of the U of A's early faculty members, Robert Forbes," says arboretum Director Tanya Quist. "He would travel around the world selecting plants and trees he believed would be good agricultural commodities for Arizona, knowing agriculture could give us an economic basis to become a state."

One of those crops was the olive tree. Could they survive here? Could they thrive? And which varieties, and from where? Spain? France? Italy?

Forbes had seen the way they laid out gardens in Europe, the neat rows of identical-looking trees. But he wasn't just planting a garden, he was running an experiment. "He wanted to assess which of these different types of olives would perform best here," Quist says. Typically, this would be done by arranging plants in a split-plot or randomized design: a square, or a rectangle.

Forbes had a thought: What if we plant an allée of olive trees, something neat and pretty that people can walk through and admire, but alternate varieties in such a way that we're still running an experiment? "It was a brilliant way of recognizing that a university is a formal, elegant place," Quist says. "But he was also carrying out science." Forbes planted that allée in the 1890s, just inside Main Gate. We call it Olive Walk.

Walk east and you can almost see the history of campus unfold in stages, from Olive Walk to the cluster of cacti around Old Main to the palm-lined lawn we call the Mall, which replaced a cactus garden in the 1950s; from the native, drought-tolerant plantings of the '80s and '90s through the swales and drainage basins you see around new projects like the Grand Challenges Research Building today — modern adaptations designed to capture and reroute rainwater as we enter a hotter, drier future.

The history of the arboretum is a history of adaptation and change. "When I started out as a student, all the plant material for Tucson was coming from California," says Mark Novak '80. Novak completed his landscape architecture degree at the U of A when the program was still housed in the agriculture school and later served as the landscape architect on campus for 30 years. He saw the formal establishment of the Campus Arboretum in 2002. He saw the cultural winds shift toward conservation and sustainability. He saw campus transition from what it had been to what it is today.

Take mesquite and palo verde trees: In the '70s and '80s, they were shunned, Novak says. "In Texas, they were considered weeds." But they worked well in the Tucson landscape and were promoted by faculty like Warren Jones and Charles Sacamano as drought-tolerant alternatives to some of the more common ornamental plantings of the time — a smart choice from a conservation standpoint, but also one that shifted the market for plantlife in the region.

"You'd have folks like Ron Gass, who was in charge of Mountain States Wholesale Nursery — you know, the largest commercial nursery in Phoenix — utilizing that [research]," Novak says, a partnership between campus and community that helped integrate scientific research with commercial production. In time, the experimental became the common. Now you can see mesquites and palo verdes in just about every urban neighborhood in the Sonoran Desert, not just because they look nice, but because this is where they belong.

The push for native plantings was crucial, but in order to sustain ourselves we'll need to continue to evolve. A few years ago, Quist went to a conference

A hand-colored image of the cactus garden formerly outside Old Main, pre-1950

'We're a land-grant institution. This is an opportunity to educate by providing a responsible model of greenspaces in full view of the community.'

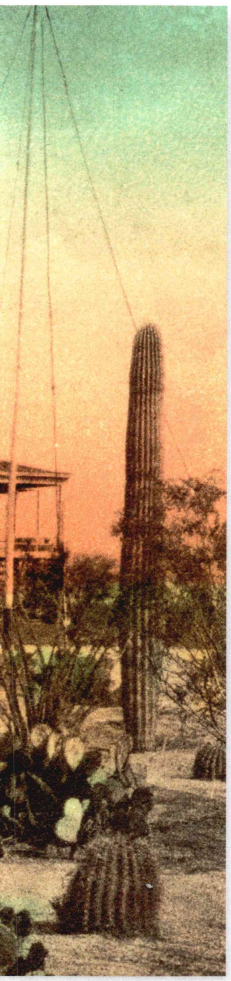
in Albuquerque where the city had laid out a succession plan for their trees based on current climate predications: What was surviving now, what might perform well in the future. "It looks like Tucson," she says. "So I thought, 'Well, when our climate gets hotter — and it's actually getting disproportionately hotter [compared to Albuquerque] — where do we go? Who do we look to as a model?"

Part of what made Robert Forbes and some of the U of A's other early researchers' work brilliant was the insight that you could predict what might happen in the Sonoran Desert by comparing it to places with similar climates. What could we learn from North Africa? What could we learn from the Middle East? "This was decades before the field of ecology was even a thing," Quist says.

Certainly it'd be nice to travel the world collecting plants, but this is the 21st century. Over the past year and a half, Quist and other arboretum researchers have combed through databases aggregating the holdings of public gardens, formal tree inventories and citizen scientists from all over the world, including how those trees are faring where they are. They then correlate those observations with data to predict what might make a good climatological match here in Tucson — a project that could light the way not only for campus but for all of Arizona. "It's not just campus as a bubble of science-based practices," Quist says. "We're a land-grant institution. This is an opportunity to educate by providing a responsible model of greenspaces in full view of the community."

This is not a solitary effort. If the arboretum makes recommendations on which species might work best here, it's the landscape architects who develop design and specification standards for those plantings and facilities managers who draw up the budgets, plans and schedules to ensure day-to-day care.

"We called it a three-legged stool," Novak says, remembering the arboretum's



inception under founding Director Libby Davidson: the arboretum, the landscape architects and facilities management. "We were all working in the campus landscape in different capacities and thought it made sense to work together."

The job can be as grand and romantic as the maintenance of the Heritage Trees, which constitute some of the oldest and most unique specimens on campus. But it can also be as ordinary as figuring out how to plot green space around underground utility lines being laid in the Campus Historic District, a project Quist likens to setting a work of art in a busy intersection instead of a climate-controlled museum.

On an informal bike tour with current landscape architect Chris Stebe '97, we stop at a parking lot. You know the one: big, flat, gray, gravel. Nothing special about it, except maybe the massive mesquite at one end. "We've got them all over the place," Stebe says, the mesquites. Still, they frame our experience, work on us, embody our idea of campus as fully as their pedigreed peers. This is the crucial and invisible work the arboretum does. So if you've ever taken an extra spin around the lot looking for a shady place to park, welcome: You're sitting on the three-legged stool.

Campus is a place, but it's also a collection of moments, a staging area for our lives: the perfect sunset (how do we have so many?), a picnic on a bench. People fall in love here, people get married — I myself officiated the wedding of two friends outside the Douglass Building back in 2017. (Thank you, Bill. Thank you, Dana.) People memorialize their friends and family on bricks and plaques and no doubt perform countless other private rituals to maintain connection with an ever-receding past. My kids learned to ride their bikes on the Mall. Then they grew. Other kids are riding those bikes now. That's part of campus, too.

"When you talk to people at alumni events or about their experience on campus, it's hardly ever about a building," Stebe says. It's the space, the big picture, "the feelings and emotions that are tied up [there]."

Of course, that big picture might change. Look at pictures of Old Main from the early 1900s and you won't see the Mall; look at pictures of the Mall from the 1960s and you won't see the desert landscaping that followed. We don't plant Aleppo pines the way we used to, because they aren't surviving. A student who graduated in 2024 will remember a different campus than one who graduated 40 years earlier. There is a thought experiment here: If we were to replace every single thing here with something else, would we still call it "campus"?

One answer is: of course. We talk as an institution about the value of research, of progress, of adaptation and innovation. "One of the biggest changes I've seen over the past 30 years is an increased student interest and involvement in sustainability," says Novak. "Incoming students are asking: 'What are you doing in this area? What are you doing to help create a sustainable future for us?'" What better way to express our land-grant commitment than to renew our commitment to the land?

It feels good, the arboretum: all these trees, all this nature. But feeling good isn't the point. "I want people to really begin to think about trees as infrastructure," Quist says. "I want them to think about trees as living things, contributing in the same ways that streets and utilities do."

She understands the charge people get from weird and beautiful trees as a gateway for a deeper experience. "Weird and beautiful things are my jam," she says. "But I think what really is more compelling to me is trees that are tough. Trees that are in it with us." The workhorses, the daily drivers, the team players — living beings whose mere existence verges on self-sacrifice. "I think about these street trees that are literally taking the brunt of it," Quist says. "They're out in the median in the middle of a roadway. They probably don't have enough water. They're getting all that reflected heat from the asphalt and pollution from the cars. And they're absorbing all that in their leaves so that we don't breathe it in."

It's a job. And the job isn't getting any easier. Campus may look a little different than it used to, but the mission of the arboretum and the people in its orbit is the same: to leverage science to bring us into alignment with the world around us. What will perform best here now? What will stand the best chance of surviving when we're gone? The sycamores in the Student Success District might not look like much today, but Stebe estimates they could get to be 60, 80 feet. Give them care. ◆

'When you talk to people at alumni events or about their experience on campus, it's hardly ever about a building. ... It's the space, the big picture, 'the feelings and emotions that are tied up [there].'

Daniel Collazo and Chloe Penna in front of a floss silk tree on the U of A campus at the corner of Park Avenue and Fourth Street

DANIEL, CHLOE AND THE BUNYA-BUNYA

A tale of love, loss and some truly enormous pine cones

By Mike Powell | Chris Richards photos

Chloe Penna '23 was just 18 when she saw it: a tall, pinelike tree just south of Yuma Residence Hall on the University of Arizona campus. Taking a walk during the height of the COVID pandemic, trying — as we all did — to not lose her mind. "It was beautiful," she says. "It was enormous. And it didn't look anything like any of the other trees around."

The walks went on. That time went on, really, longer than any of us expected. "And I would always stop by the tree and look for cones. I did that every day for months. It was a way to ground myself," she says. "I would go and check in with the tree."

Enter Daniel Collazo '22. Daniel was working as a compost specialist with the Office of Sustainability while getting a degree in molecular and cellular biology. "We initially met in the [U of A] Community Garden," he says, which Chloe ended up managing for three years while pursuing a double major in English and professional and technical writing. "A lady walked up to me while I was getting stuff out of a big storage container, and we just started talking."

Talking led to walking, and walking led back to this tree, which, by the way, is called the bunya-bunya. An Australian conifer. Originally a houseplant, actually, set among the incredible diversity of specimens that make up the U of A Campus Arboretum, far from its native home but thriving nonetheless.

"I'm on my first date with this guy," Chloe says, jerking her thumb. "And we're walking around at campus at, like, 7 or 8 a.m., and I'm showing him all of my favorite trees and all my favorite spots, and he's showing me all of his favorite spots. And I take him to the tree and just tell him about it and why it's so special."

The bunya-bunya visits became a habit. "Whenever we would come to campus, we'd always walk by the tree," Chloe says. "It was just part of my routine. This tree I love so dearly."

July 2024 brought one of the most devastating monsoons in recent history. Roofs were ripped off buildings and homes, walls blown out, power lost, and more than 80 trees across the U of A campus were uprooted or destroyed, snapped in half like twigs. Trees that had in some cases been on campus for more than 80 years. The bunya-bunya was one of them.

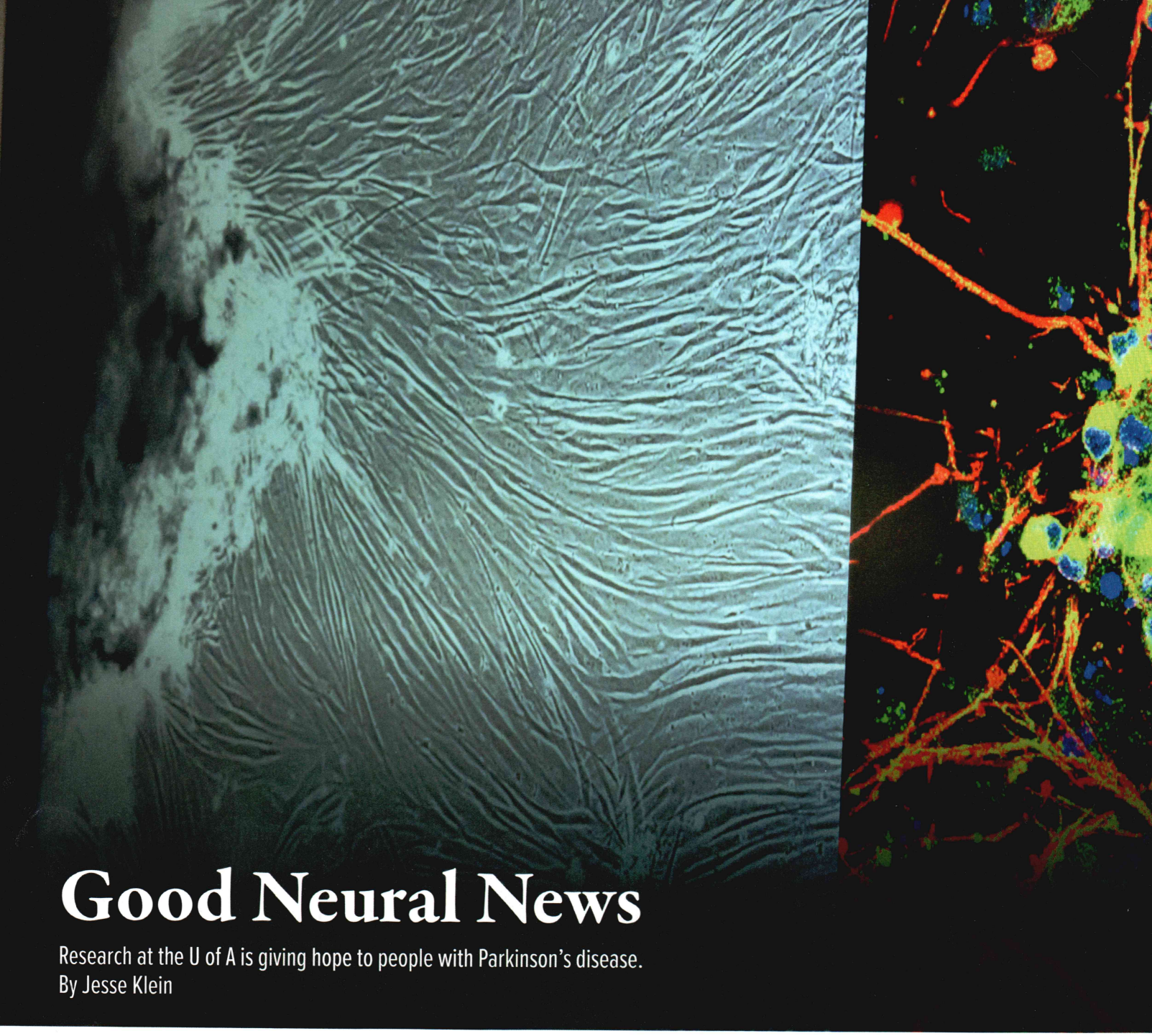
Daniel kept it to himself for a day before telling Chloe. "By the time we got there, the tree was gone. It was just a stump," she says. They stood quietly with a candle and grieved. "We had a good three and a half years." What does it mean to love a tree? Just as much as it means to love anything, really: a pet, a friend, a familiar marker in the scenery of your life.

"I do have a list of my other favorite trees on campus," Chloe says. The Chinese pistache tree outside the Cesar Chavez Building. The floss silk trees, one of which is on a lawn just south of the university gates. But loss is loss and grief takes time.

Then: "I don't know if we should mention that we did just get engaged a month ago," Chloe says. You should! Mention it! Shout it from the rooftops! "I'd been thinking, oh, the tree — that would be a good spot for that to happen. But it didn't work out like that. But it was OK. Happened in Central Park [in New York]."

'Whenever we would come to campus, we'd always walk by the tree. ... It was just part of my routine. This tree I love so dearly.'

She thinks back to the day she found her first bunya-bunya cone, in the summer of 2020. "It was just a terrible time in the world. Everything was so bad. It was so hot. It hadn't rained in months. There were fires in the mountains and Oro Valley. Things were so bleak." Then, out on one of her morning walks, there it was: a huge cone, about the size of her head. Ten pounds. "It was sort of the coolest day of my life. Just pure exhilaration to have finally found what I'd been looking for for so long," she says. She brought it home, where she took approximately a million pictures, then put it on display on her nature shelf. It's still there. ◆



Good Neural News

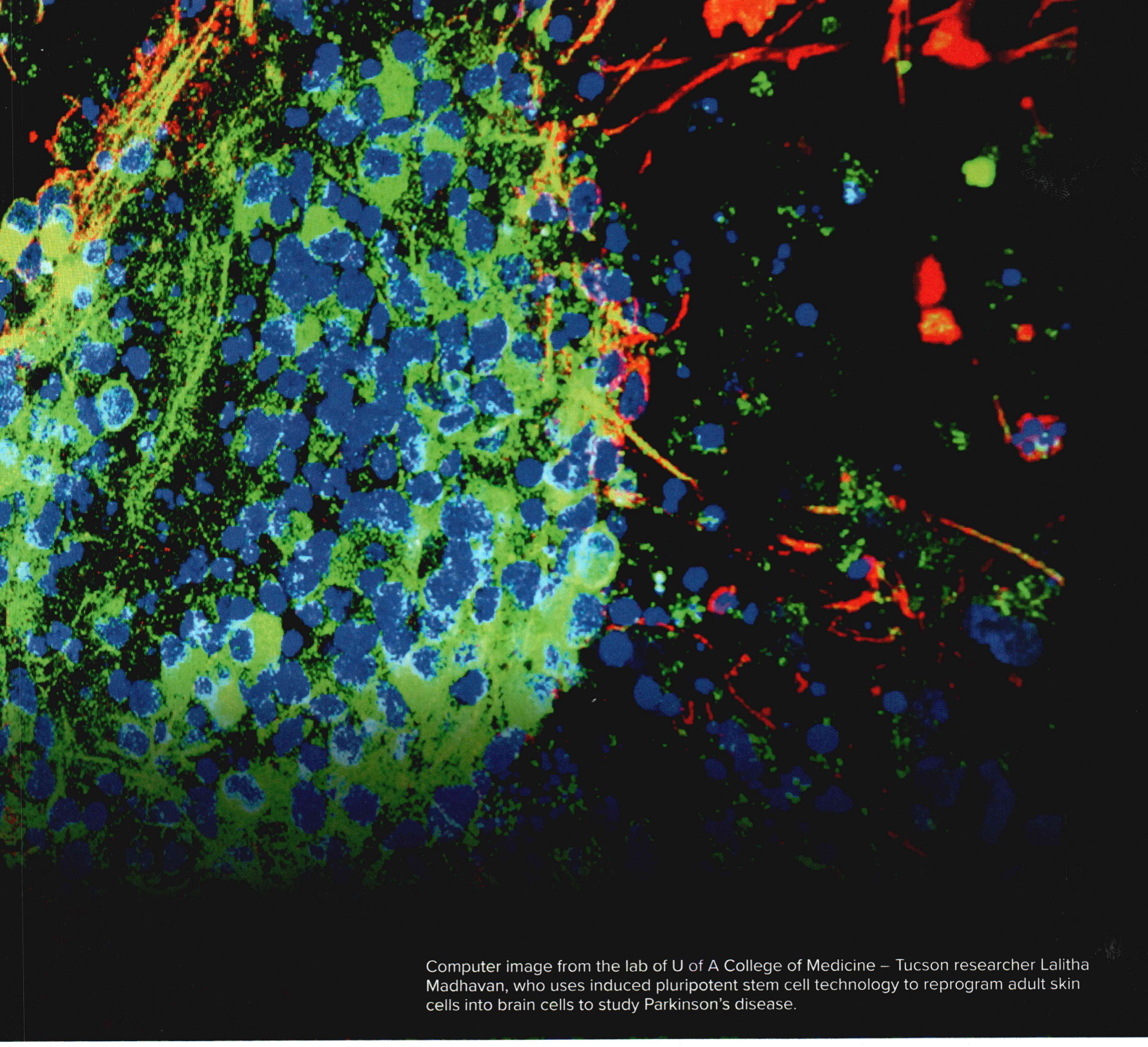
Research at the U of A is giving hope to people with Parkinson's disease.
By Jesse Klein

In the 2010 romantic dramedy "Love & Other Drugs," starring Anne Hathaway and Jake Gyllenhaal, an old man says of Parkinson's disease, "It's not a disease, it's a Russian novel." A disease so characterized by slow, long suffering that the screenwriter decided to equate it with the breadth of Tolstoy or the intensity of Dostoevsky.

Parkinson's disease is the second-most common neurodegenerative disease in the United States. By some estimates, almost 1 million Americans are living with it, including 1% of people over the age of 50.

Parkinson's disease occurs when neurons in the brain start to die off, causing dopamine, an important brain chemical, to drop dramatically. The decrease in dopamine makes it difficult for patients to move. They experience debilitating tremors, stiffness, pain and cognitive issues such as depression and memory loss.

University of Arizona researchers have published a flurry of research on Parkinson's in recent months, addressing some of the most understudied and least understood aspects of the disease. Their discoveries are expanding the way doctors think about Parkinson's disease, even challenging prevailing views on how the disease moves through the brain — all with the goal of pulling patients out of that Russian novel plot.



Computer image from the lab of U of A College of Medicine – Tucson researcher Lalitha Madhavan, who uses induced pluripotent stem cell technology to reprogram adult skin cells into brain cells to study Parkinson's disease.

One of the cruelest ironies of Parkinson's disease is that the drug best at treating its characteristic rigidity eventually causes its own movement problems. The drug, levodopa, increases dopamine levels in the brain, but when taken chronically, causes involuntary and uncontrollable flailing-like movements, a condition called levodopa-induced dyskinesia. Nearly 40% of patients develop dyskinesia after four to six years on the drug.

One of the U of A studies showed that a single dose of ketamine could reduce these flailing movements in rats and reduce patterns of pathological brain activity associated with Parkinson's disease and dyskinesia. The study was conducted by Torsten Falk, Ph.D., a professor of neurology at the U of A College of Medicine – Tucson, Stephen Cowen, Ph.D., associate professor in the Department of Psychology at the College of Science, and Abhilasha Vishwanath, Ph.D., a postdoctoral research associate, also at the Department of Psychology.

Rats are a common experimental subject for investigating Parkinson's disease, as they share the same brain structures that are most affected in human patients. In Vishwanath's study, rats had their dopamine neurons knocked out to model the cell death in Parkinson's disease. These animals were then treated with levodopa, which triggered the disordered flailing movements seen in

Torsten Falk and Scott Sherman
Photo: Kris Hanning

The lab of Lalitha Madhavan (right)
Photo: Kris Hanning

human patients with dyskinesia. These movements were then reduced by ketamine.

What the researchers found challenged the existing view of how these uncontrollable movements are created. It was previously believed that the motor cortex, a part of the brain that controls movement, sent faulty signals to cause the unusual movements. But Vishwanath and Cowen's team found a disconnect between the activity of neurons in the motor cortex and the movements themselves.

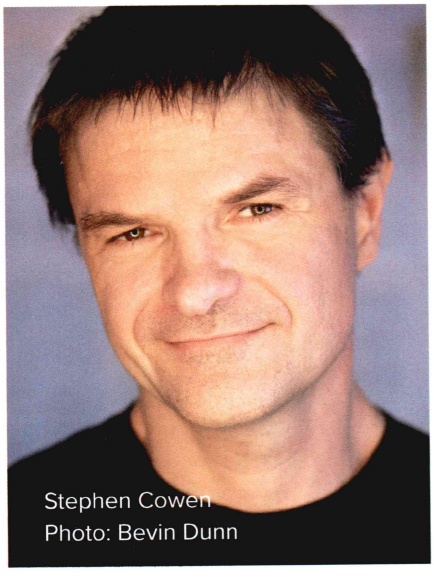
"A healthy motor cortex is conducting and organizing and synchronizing movements," Cowen says. "But [for these patients] that conducting role seems to disappear. The conductor leaves the building, and these movements are just left to do what they want on their own. And as a result, you get the emergence of these uncontrolled movements."

"[The motor cortex] is failing to send timely stop signals," Vishwanath adds.

Ketamine, already known for its neuroplastic effects for people with depression, changes the activity in the brain and resets it.

How ketamine works to reduce uncontrolled movements is not known, but this study provides some clues. Specifically, Cowen and his team noticed that ketamine radically reorganized the interactions between motor cortex neurons and eliminated a high-frequency brain wave associated with the disease. Like shaking a bucket full of marbles, ketamine may act to randomize and reorganize brain activity, derailing pathological patterns and helping the

Kelsey Bernard
Photo: Kris Hanning



Stephen Cowen
Photo: Bevin Dunn

Abhilasha Vishwanath
Photo: College of Science

motor cortex regain control of movement.

"[Levodopa] works amazingly well for years," Cowen says, "so, we'd love to have these patients take the drug longer."

Levodopa is still the best treatment for Parkinson's disease, and ketamine might be the key to letting patients reap its benefits without the chronic side effects. This treatment is being explored in human patients by College of Medicine – Tucson neurology professor Scott Sherman, M.D., Ph.D., who helped organized a successful Phase 1 clinical trial and is planning a Phase 2 clinical trial.

This research was supported by grants from the Arizona Biomedical Research Commission to Falk and Sherman; from the National Institutes of Health NINDS to Falk and Cowen; from the Robert and Payton Davies Parkinson's Disease Research Fund; from the Jerry T. and Glenda G. Jackson Fellowship in Parkinson's Research; and an estate gift by Mrs. Mary Mack to Sherman.

The movement challenges caused by Parkinson's disease have long been the most visible and, therefore, the primary focus of treatments. The disease's cognitive symptoms receive less attention and currently lack effective treatments.

"Motor [symptoms are] the most obvious and the most initially debilitating," says Kelsey Bernard, Ph.D., a postdoctoral researcher. "But we currently have a drug that alleviates their motor symptoms. So, once you've got that under control, then you can see these other issues that are not addressed."

Bernard conducts her research under the mentorship of Lalitha Madhavan, M.D., Ph.D., who is co-principal investigator along with Falk, both professors of neurology at the College of Medicine – Tucson. Their research programs focus on Parkinson's disease progression and developing much-needed therapeutics for this disorder.

Bernard's study focused on a way to protect the brain from the neurodegeneration that occurs with Parkinson's disease, building on the known neuroprotective effects of a tiny protein called PNA5.

Reduced dopamine seems to be the primary driver behind the stiffness and rigidity associated with Parkinson's disease. But it's the chronic inflammation of the brain driven by brain cells called the microglia that could contribute to the cognitive issues Parkinson's patients experience. Just as a sprained ankle triggers inflammation to protect injured tendons, the microglia in Parkinson's patients release inflammatory chemicals in the brain. According to Bernard, while this inflammation may offer short-term protection, chronic exposure to these inflammatory chemicals leads to neurodegeneration.

"If [ankle] swelling continued for three weeks out, and there was no physiological need for that to occur, that causes subsequent issues," she says.

She found that PNA5 calmed the microglia's overactive immune response, lowering inflammatory chemical levels in the blood of mice in the study. And she observed not just chemical changes but also shifts in the animals' cognitive behavior. The mice were tested in a maze and in an object recognition task — both

standard methods for assessing cognition in lab animals, which correlates with human cognitive function.

"PNA5 completely restored the deficit seen in the Parkinson's animals," she says. The mice with Parkinson's disease were just as good at navigating the maze and picking objects as healthy mice. And she didn't see any improvement in the motor issues, narrowing PNA5's effects to cognition only.

A major advantage of PNA5 is that it can be injected anywhere in the body and still cross into the brain, eliminating the need for direct brain injections and making the treatment far more accessible. Bernard is also hopeful that an oral version will prove as effective as the injectable form she tested.

This research was supported in part by a grant from the Michael J. Fox Foundation for Parkinson's Research to Falk and Madhavan; from the National Institutes of Health; from the ARCS Foundation Scholarship to Bernard: and the Robert; and from the Payton Davies Parkinson's Disease Research Fund to Sherman and Falk.

But what if we could get patients off drugs completely?

Paul Larson, M.D., professor of neurosurgery at the College of Medicine – Tucson and chief of neurosurgery at the Southern Arizona VA Health Care System, performed a first-of-its-kind surgery in 2024 when he implanted healthy neurons into the brains of Parkinson's patients. The goal was to replace the dopamine neurons lost to Parkinson's in a clinical trial sponsored by Aspen Neuroscience.

Larson used cells taken from the patients' own skin that had been transformed into immature dopamine-releasing neurons. He then surgically deposited them into the patient's brain.

"We believe they'll integrate into the circuit, and they'll start producing dopamine," he says. "Over time, they'll actually become part of the circuit."

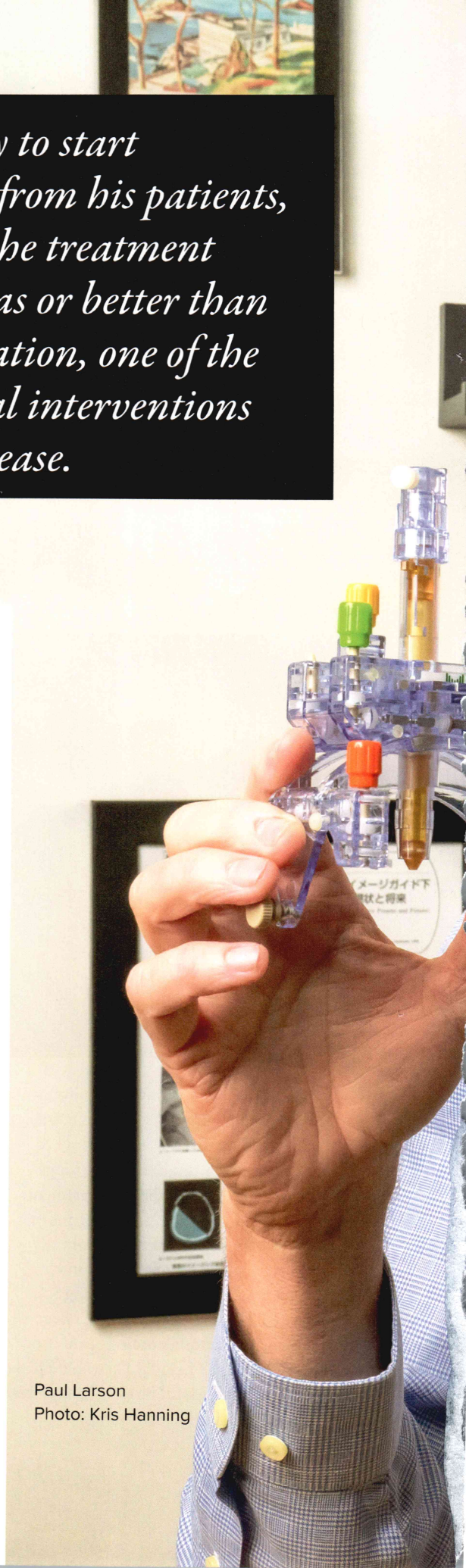
One of the key breakthroughs of this treatment is its use of the patient's own cells, which Larson hopes will eliminate the need for the immune-suppressing drugs typically required for donor transplants. The body attacks foreign cells, forcing transplant recipients to take lifelong medication to prevent rejection. Because Larson's patients are using their own modified cells, the hope is that these drugs won't be necessary.

While it's too early to start evaluating results from his patients, Larson is hoping the treatment works just as well as or better than deep brain stimulation, one of the traditional surgical interventions for Parkinson's disease.

While it's too early to start evaluating results from the Aspen trial, he is hoping the treatment works just as well as or better than one of the traditional surgical interventions for Parkinson's, deep brain stimulation (DBS). DBS involves implanting electrodes into the brain that act like a pacemaker for the brain — their mild electric pulses keep the electricity in the brain on track and reduce motor symptoms for Parkinson's patients.

"With DBS, there's a significant ongoing maintenance requirement: wiring, a battery that needs recharging or replacing," he says. "You have to go in and have the settings adjusted as your disease progresses.

Larson hopes the transplanted cells are just as effective as DBS, without the need for upkeep. That might help write a whole new story. ◆



Paul Larson
Photo: Kris Hanning

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TECH ON THE BRAIN

Researchers are developing portable, AI- and VR-driven tools to help diagnose traumatic brain injury.
By University of Arizona Health Sciences Office of Communications | Noelle Haro-Gomez photo

William D.S. Killgore and his team testing out the VRMONA.

A roadside bomb goes off, sending soundwaves rippling through the air and into the soft tissue of a soldier's body. The blast continues up, popping microscopic blood vessels in the brain. The service member is dazed, but regains their footing and presses forward, thinking they narrowly avoided a serious wound.

This is just one example of how someone in the military might sustain a traumatic brain injury, or TBI. TBIs can be caused by a blow to the head or anything that causes a jolt to the brain. It is one of the most common forms of injury in recent military conflicts.

Moderate and severe TBIs can be fatal or lead to lifelong health problems. Fortunately, most TBIs are mild. But even a mild TBI, also referred to as a concussion, can have ongoing complications and need time to heal.

"A mild TBI can cause portions of the outer layer of the brain, the cerebral cortex, to shift or slide. This tears the nerves connected to it. These damaged connections often repair themselves, but sometimes they shrivel up and die," says William D.S. Killgore, a professor and the director of the Social, Cognitive and Affective Neuroscience Lab in the University of Arizona College of Medicine – Tucson's Department of Psychiatry.

"A person with this injury could have trouble concentrating or remembering information, experience dizziness, fatigue or disturbed sleep, and they might have trouble regulating their emotions."

Killgore and his team are developing a small, portable tool to quickly diagnose military personnel with TBI in the field. The Virtual Reality Military Operational Neuropsychological Assessment, or VRMONA, will use virtual reality and artificial intelligence to identify brain deficits through a combat-type game.

The gold standard for assessing a TBI is a neuropsychological assessment usually consisting of a battery of paper-and-pencil tests administered by a highly trained psychologist. It can take four to eight hours. For small teams conducting military operations in far flung areas, this approach is usually not feasible.

"The traditional style of assessment can be taxing on a person. You want to measure multiple domains, like memory, language and spatial skills. On paper,

that involves a separate test for each," says Killgore, who also is a member of the university's BIO5 Institute. "If successful, our computer systems may find where these domains overlap on different tasks in the game and distill the whole process down to 10 or 20 minutes. VRMONA could be a revolutionary new way to assess traumatic brain injury."

Killgore's team has already developed a prototype for VRMONA that is made up of a VR headset and handheld controllers paired with an AI technique known as deep neural network learning. Their new research, funded by a $1.5 million Department of Defense grant, will upgrade the equipment and the game itself while evaluating 1,000 participants over several phases of development.

In the first phase, participants will be split into three groups: a healthy control group, people with mild to moderate TBI, and those with other neurological disorders. Data will be collected from traditional neurological exams and cross-referenced with the data and results from VRMONA. Researchers will update and revise the system over three cycles of testing.

Killgore and his team will use traditional neurological exams and VRMONA to assess four neurocognitive domains that are particularly sensitive to the effects of mild TBI: attention, processing speed, memory and executive function.

"Some people might not see the value in something like an abstract puzzle test; I think soldiers will relate to something that resembles their job," Killgore says. "The great part about VRMONA is that it connects the service member to tasks relevant to their day-to-day lives. The simulation might require the person to pay attention to what is going out over their radio, quickly sight a weapon, or make a decision to shoot or not shoot. It will look similar to video games they might have already played, and I think they will want to beat the game."

If successful, VRMONA will be able to instantly collect and analyze data, allowing it to identify deficits associated with TBI in a fraction of the time of a traditional assessment. Killgore hopes future iterations and advancements of VRMONA will be scaled down in size so that the equipment can fit into a medic's bag and be operated by nonmedical personnel, if needed.

"Eventually, we also want to increase the diagnostic abilities to precisely identify what type of neurological disorder someone is suffering from. This could be anything from adult attention deficit disorder to Parkinson's or Alzheimer's disease," Killgore says. "I think we will be able to adapt VRMONA for people outside of the military as well. Instead of a combat-style game, it could be a simulation where you need to drive to the store for groceries or prepare a dinner."

Killgore has focused much of his research on the mental health and well-being of those in the armed forces. His work in this area dates to his own military service, which began after Sept. 11, 2001. In total, he has spent 22 years in the military.

"When the planes hit the Twin Towers, I decided to join the Army as a researcher. I left Harvard, where I was already starting my research career, and joined the military. My friends couldn't believe it," says Killgore, who became a research scientist in the Sleep Research Center at the Walter Reed Army Institute of Research in Silver Spring, Maryland.

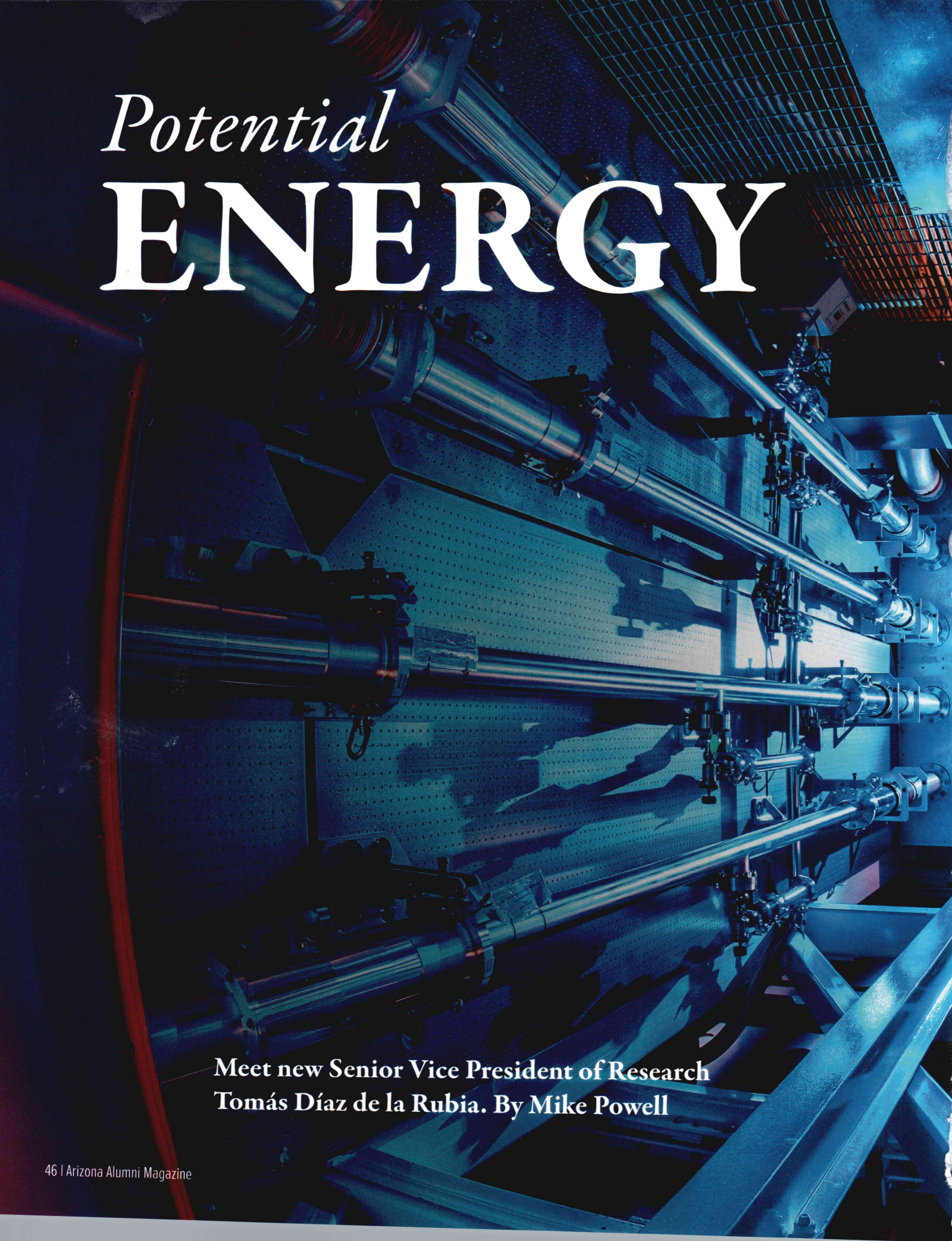
"I spent five years on active duty doing research on sleep, post-traumatic stress disorder and other issues," he says. "I went back to academic research after that, but I stayed in the Army Reserves."

Killgore says the symptoms of a mild concussion can easily be overlooked on a chaotic battlefield. VRMONA could help teams quickly assess an injured soldier so they can make the best decision for that person's health and for their mission.

"Veterans often call mild TBI an 'invisible wound of war,'" Killgore says. "Soldiers may look OK on the outside, but every area of their life may be impacted. VRMONA may help reduce the risk of continued injury and allow someone the opportunity they need to rest and heal."

The VRMONA project was made possible with a seed grant from the U of A Health Sciences SensorLab. The SensorLab team developed the prototype for VRMONA and demonstrated its proof of concept. SensorLab resources include state-of-the-art devices and wearable sensors that can track variables like heart rate and eye motion. Killgore's team launched their project and collected pilot data with a commercially available VR system and a simple shoot/no-shoot game. They brought in 20 healthy individuals to play the game and compared results to traditional neurological assessments. ◆

'Veterans often call mild TBI an 'invisible wound of war.' ... Soldiers may look OK on the outside, but every area of their life may be impacted. VRMONA may help reduce the risk of continued injury and allow someone the opportunity they need to rest and heal.'



Potential ENERGY

Meet new Senior Vice President of Research Tomás Díaz de la Rubia. By Mike Powell

Inside the National Ignition Facility, an experimental fusion complex at Lawrence Livermore National Laboratory
Photo: Damien Jemison/LLNL

Tomás Díaz de la Rubia says there were two things a kid growing up in northern Spain couldn't escape. One was soccer. Football. "It was everywhere," he says. The other was Formula 1 racing — exotic to American audiences, but second nature to Europeans.

It was the racing that hooked him: these sleek machines, whipping around the track at 200 miles an hour. "Look, Formula 1 is about risk," he says. "It's about being on the leading edge. I think that idea that you have to be on the leading edge to win has always been very attractive to me."

The product of a family of scientists and engineers, he knew from a young age that he'd go into what he calls "a STEM

discipline." "When I was around 12 or so, my parents got me a subscription to a magazine called Investigación y Ciencia, which is a translation of Scientific American," he says. "I just became fascinated by science and physics and so on. One thing led to another."

After starting college in Spain, he first came to the States to study at the University at Albany in upstate New York. "I came with the idea that I was going to spend a year. That was 43 years ago. Never went back."

More than half of those 43 years were spent at the Lawrence Livermore National Laboratory in Livermore, California,

'We're a billion-dollar university in research — one of only roughly 30 in the country out of 1,500. ... That's a unique club to be part of.'

Díaz de la Rubia and Jennifer Barton, director of the U of A's BIO5 Institute, speaking at the February Fuel Wonder event in Phoenix. Photo: Chris Richards

where Díaz de la Rubia landed as a postdoc working on developments toward fusion energy — a preoccupation that sticks with him today.

"Livermore had — still today, has — the biggest, fastest computers on the planet," he says. "They made me an offer I couldn't refuse: I had access to these big computers." He had found his cars.

Now the senior vice president of research and innovation at the University of Arizona, Díaz de la Rubia is charged with martialing the considerable brainpower of the U of A toward solving what he calls the "grand challenges of the future."

Take fusion. "Fusion is the source that powers the stars," he says. "Everything in the universe happens up in the stars. All the energy that we get on Earth comes from the sun. So, if you can mimic and replicate the power of fusion here on Earth, you've transformed the way we think about energy in the future."

A beautiful image, something out of a children's book, really. The reality is trickier. "We have been trying for decades to conquer fusion on Earth," he says. "It's very hard." In 2022 came a breakthrough, at — of all places — Díaz de la Rubia's old employer, Livermore.

"They were able to compress a hydrogen gas to 100 million degrees Kelvin and 100 billion atmospheres of pressure," he says. "They crashed this gas into this very hot, very high-pressure spot, and these isotopes of hydrogen — these hydrogen atoms — fused together. They overcame the repulsion between two equally charged particles. When that happens, Einstein showed us that the light-changing mass of the outgoing products is transformed into energy. That's the energy of fusion." They were able to replicate, on a very small scale, the sun.

Now, let's say they're able to do it again (and Díaz de la Rubia says "it's not an if, it's a when"). Where would a place like the U of A fit in? First, there's the technological aspect. "We want to be the university developing the materials, the lasers, the engineering technologies to take that scientific breakthrough that happened in a laboratory in California and turn it into a commercial source of power," he says.

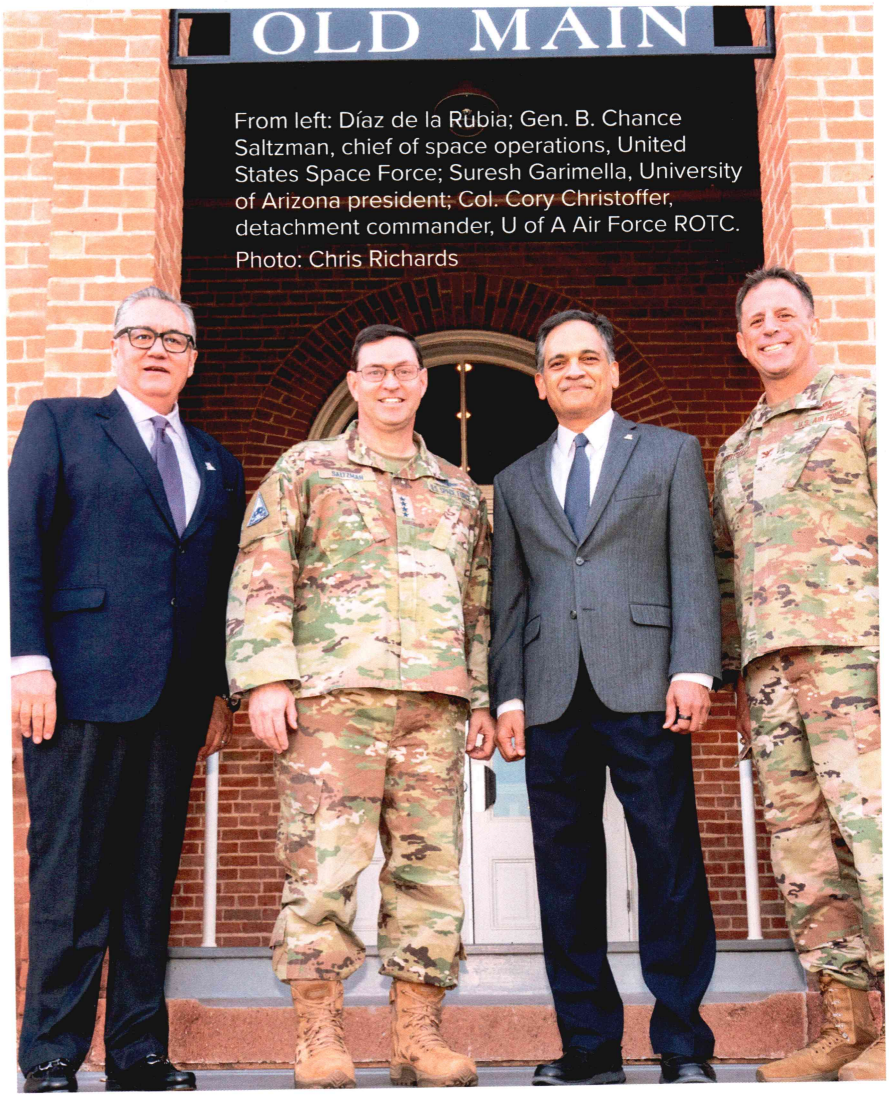
This would also mean building partnerships with the private sector and business community, making ourselves indispensable to the economic advancement of the state. "[The other day] I was giving a speech about our

vision for the future to a company that is thinking about siting their manufacturing facilities here in Tucson," he says. "I told them: Think of the University of Arizona as a place with open doors for you. We want to be your partner."

This is a familiar refrain. But there is a finer point. "If you think about the energy market over the next 20, 30 years; if you think about energy demand not just from data centers but from global growth; if you think about the billion people that don't have access to energy today, and you think about that demand, and you think about all of the power plants that are aging and need to be replaced over the next 20, 30 years — it's a multi-trillion dollar market globally, right?" he says. To be able to contribute to what's coming, we have to think about it now. We have to be able to see the horizon.

Then there's the question of culture. A year ago, Díaz de la Rubia asked a group of political scientists and sociologists to survey people about their responses to the concepts of "nuclear power" and "fusion." With "nuclear," it was: "It's dirty, it's dangerous." You talk about building a nuclear power plant in someone's backyard and people get upset. Now, fusion is technically nuclear power. "But fusion is clean," he says. "There are no greenhouse gas emissions. No high-level radioactive waste. It's safe." In a webinar about a new U of A research competition called the Big Idea Challenge, Díaz de la Rubia joked that a mechanical engineer, a chemical engineer and an electrical engineer don't make a transdisciplinary team. Facing the challenges he imagines facing isn't just about building things, it's about changing minds and shaping ideas. About using the social and behavioral sciences to bring the public into a conversation. We will not meet the future with STEM alone.

Fusion is one example. Díaz de la Rubia also talks about combining our research in AI into our work in health care, and combining our work in space — in particular, satellite monitoring — with our work in defense and national security. ("Space is a very, very busy place these days," he says.) These are not new initiatives on their own. But in seeing across disciplines and thinking more flexibly about how we can apply our expertise, Díaz de la Rubia imagines a kind of multiplicative effect: not just two familiar projects, but a new project entirely.



From left: Díaz de la Rubia; Gen. B. Chance Saltzman, chief of space operations, United States Space Force; Suresh Garimella, University of Arizona president; Col. Cory Christoffer, detachment commander, U of A Air Force ROTC.
Photo: Chris Richards

"We're a billion-dollar university in research — one of only roughly 30 in the country out of 1,500," he says. "That's a unique club to be part of." Díaz de la Rubia would like to double that number to two billion. "To do that, you cannot simply ask the same faculty to write more proposals and work harder," he says. The answer will probably be somewhere we haven't yet been.

We come back to Formula 1. "There's a lot of technology that comes out of the developmental aspect of Formula 1, because they're really on the leading edge, on the frontiers," he says. "You think about how those technologies developed in Formula 1 eventually get into our cars."

There is an analogy to his work at Livermore here. The military gets all this great technology before it enters the market. Formula 1 is the proving ground for what might eventually end up in our cars. Work done in small, confined places that ends up making a positive impact on society in general and leaves behind a legacy for future generations. Díaz de la Rubia has spent more than 40 years in labs and universities. And this whole time, he's been thinking about the world. ◆

Kelly Wetteland in the bike portion of the Battle in the Fort Triathlon in Fort Worth, Texas. Photo: Gunnar Word, Arizona Athletics

GRIT AND GUTS

In their second year of competition, the Arizona women's triathlon team won it all. By Sarah Kezele

Last August, Wes Johnson, head coach of Arizona women's triathlon, posed a simple but powerful question to his team: "Why not us?"

It was the start of the program's second season, and belief was high after a top-five national finish in the program's debut year. He hoped the mantra would help his athletes shed mental limitations and embrace their full potential.

"It wasn't necessarily 100% to do with winning nationals," Johnson says.

But on Nov. 9, those three words delivered Arizona to the top of the podium at the 2024 Women's Collegiate Triathlon National Championships in Clermont, Florida. It was the U of A's 23rd team national championship. Four Wildcats finished in the top 10, including Kelly Wetteland, who completed the 750m swim, 20k bike ride and 5k run in a blistering 59:20 for second place overall.

Wetteland says that early in the season, she and her teammates would joke about the "Why not us?" mantra. As time passed and the team got faster, something changed.

"We really started thinking about it," Wetteland says. "You get on the line at nationals, and you're looking at all your friends like, 'Really, what's stopping us from doing it?' It became more personal the more we said it."

Building a program

The university announced Johnson as its first women's triathlon head coach in December 2022. At that point, Johnson had been a full-time triathlon coach for about 13 years, coaching international talent and spending nine years with USA Triathlon. He guided triathletes at the Paralympics, World Championships and Pan American Championships, and was honored in 2021 as the USA Triathlon Developmental Coach of the Year.

His move from the pros to a college program came with a considerable learning curve: By the time he had all of the NCAA rules and regulations down pat, he only had six months to put together a roster for 2023 and lock in a recruiting class for 2024.

"We got creative," Johnson says.

Taking advantage of the sport's mainstream status in Europe, Johnson trekked to Hamburg, Germany, to recruit rising stars at the 2023 Junior World Championships. The miles were worth it, as he landed a commitment from the crown jewel of the 2024 recruiting class, Margaréta Vráblová of Slovakia. (In November 2024, Vráblová took third overall at nationals as a true freshman and was voted the National Freshman of the Year by the College Triathlon Coaches Association.)

Johnson also found top-tier talent already on campus at the Hillenbrand Aquatic Center, attracting Wetteland and Grace Reeder from Arizona's swimming and diving program. Wetteland, a double major in law and political science, ran distance in high school but had no competitive experience on a bike.

"Honestly, it's a little delusional," Wetteland says with a laugh about pursuing triathlon. "It was like, I think I can do two out of the three, so I can probably figure that one out."

That grit paid off in spades at the national championships in November. Damage done by Hurricane Milton forced a late change to the racecourse and split the event into two days: the swim on Friday, Nov. 8, and the bike and run on Saturday, Nov. 9.

"If anything, the swim probably hurt us more than it helped us, because we were really ready for the continuous swim, bike and run," Johnson says. "Just a swim, we don't necessarily train for that. But I also knew how fit they were, how strong they were and how good they were, and so I really wasn't nervous about it. I still had the same kind of belief."

Two Wildcats produced top-five times in the swim — Wetteland and Dana Přikrylová — solidifying the team's position for the bike and run the next day.

Why not us, right?

Now the focus has shifted to year three. How does such a young program follow up a national title? Johnson is taking a page from the playbook of Emma Hayes, head coach of the U.S. women's soccer national team: "Break what isn't broken."

In other words, challenge the status quo and deny complacency.

"We're living it right now," Wetteland says. "Every day we're trying to find things we can refine and perfect so that when fall does come, it almost feels like a celebration again." ◆

Top (from left): Molly Lakustiak, Lydia Russell, Kelly Wetteland, Margaréta Vráblová and Ellison Wolfe celebrate after winning the national championship; photo: Marison Bilagody, Arizona Athletics. Middle (L): Kelly Wetteland competing in the Battle in the Fort Triathlon; photo Gunnar Word, Arizona Athletics; (R): Kelly Wetteland hugs a teammate at the Battle in the Fort Triathlon; photo: Gunnar Word, Arizona Athletics. Bottom: Head coach Wes Johnson at the national Championship celebration in Tucson; photo: Marison Bilagody, Arizona Athletics.

ICE IN THE DESERT

After 18 years, the U of A women's hockey is back on the ice.
By Kim Stoll | Chris Richards photos

Caitlin Hogan came to the University of Arizona to build a team from nothing.

A Minnesota native, she grew up with a love for sports and had a natural talent for skating.

"My parents remind me of the time that I came home from kindergarten, and I was like, 'Hey, I'm going to play hockey.' So they got me the equipment, they got me into the sport, and I loved it from the second I hit the ice," Hogan says.

With no all-female teams for young girls to join, she played on a boys' team — which is still how many young women interested in the sport get started, she says.

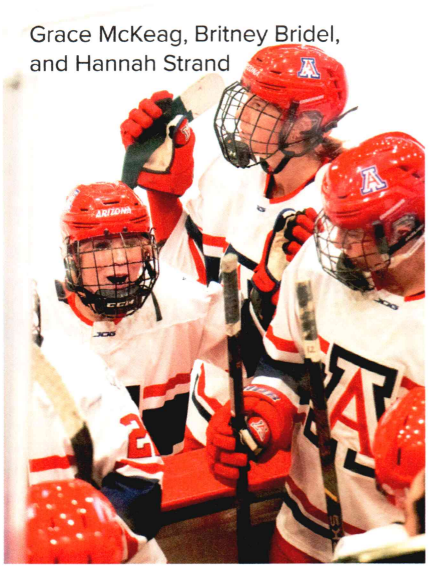
Olivia Sorlie

Grace McKeag

"Once you get up to a certain age, that's when they start teaching body checking on the boys' teams," she says. "And I'm a small person, so I learned how to avoid being hit by improving my speed."

Hogan went on to play Division I women's hockey for Minnesota's St. Cloud State University. After college, she ran a successful fitness facility in California for several years and competed for Team USA in Olympic Weightlifting, but eventually felt a pull to get back into her favorite sport: hockey. While visiting Tucson, she had a series of connections and conversations that led to an incredible opportunity to build the U of A women's hockey team as the head coach.

"This was the perfect opportunity for me to get back into hockey and help grow the sport out west," she says. "It's very challenging for young women to get into the sport, and out here, with only one ice sheet in town, it's even harder. Taking on



Grace McKeag, Britney Bridel, and Hannah Strand

Lucy Verderber

Essi Toivanen and Sofie Thompson

that responsibility was really interesting to me, as well as growing a team from the foundation up."

Hogan started recruiting players in 2023, and in September 2024 the team took to the ice for its first game.

"My team is full of hard workers," she says. "As a player, I was always known for my grit, my tenacity, my no-quit attitude. And that's what I feel the U of A represents — people who don't give up. I look for that type of player when recruiting."

The team attracted many transplants from hockey hot beds like the Midwest and Canada. The biggest draw? "The nice weather," Hogan laughs. "They don't have to shovel snow." Aside from that perk, the women are excited to build something new and show young girls what women's hockey is all about.

"For me, there's a lot of pride that comes with it," says Leila Schultz, a freshman education major from Alberta, Canada, where "you're in skates by the time you can walk."

"Coming from somewhere where hockey is so big, to somewhere where hockey is nothing, we're starting it fresh," she says.

"Our biggest challenge is that we are so young, and we only have a few upperclassmen that we can look up to," says Lucy Verderber, a freshman communications major from Massachusetts. "But I also think it's a really great opportunity. Our freshman class is huge, so we get to establish a team culture, and coach Hogan is going to bring in players she thinks will fit that."

Both players agree coach Hogan's coaching style drew them to Arizona.

"She puts us first, makes sure that everything we need, we have," says Verderber. "She's like our second mother."

Building a team with 20 new players and getting them all on the same page is a challenge, says Hogan, but an even bigger hurdle is the lack of ice time. The team practices at the Tucson Convention Center — the only rink in town — sharing ice with other teams and working around event schedules. Some weeks, there's no ice at all. The team packs up their gear, takes it back to their dorms and makes do with what they have, hitting the gym instead.

"There's no team around the country that has to deal with that," Hogan says.

Women's hockey in Tucson has struggled with limitations before. From 1999 to 2007, the U of A's first women's team, the Icers, faced high rink fees, travel costs and scarce ice time. Eventually, the challenges led to the club's dissolution.

"Just like the original team had to deal with fundraising, it's the same for us as well," Hogan notes. "Every bit can help. It's expensive to travel and to keep this team together."

Hope is on the horizon in the form of the Mosaic Quarter Iceplex, which will end the shortage of ice in Tucson for both U of A hockey teams, men's and women's. They will be the Iceplex's primary tenants. Amenities at the 3,000-seat venue will include locker rooms, an athletic training area, concessions, a pro shop, laundry facilities and more. The Iceplex, which is currently under construction at Pima County's Kino Sports Complex, is expected to be completed in 2026.

For now, hockey fans can cheer on the U of A at the TCC. Games are free to attend, and Hogan encourages people to come see what women's hockey is all about.

"It's not just about hitting, it's not just about fighting — it's about fluid play, making good passes and hard shots," she says. "And I think the women's games detail that a lot more than the men's game."

"It's nice, looking up into the stands and seeing that people want to watch you play," Schultz adds. She and Verderber are looking forward to inspiring young girls in the desert to hit the ice and give hockey a try.

Support Wildcat Women's Hockey at arizonawomenshockey.com. ◆

EVERY STEP OF THE WAY

UnderSkore builds community and friendship through a shared love of K-pop.

By Rhaya Truman | Chris Richards photos

UnderSkore showcase performance

The sound of synchronized steps hitting the hardwood floor thunders through the rehearsal space as the dance captains preview the day's choreography. The workshop attendees look on in anticipation, hoping that in less than an hour, they will be able to perform the same routine — to Lisa's "Rockstar" — with just as much power and confidence.

I notice the excitement buzzing around the room as people hug and catch up with one another and make new friends. Everyone strides toward each other with ease, confidently sparking conversations with the understanding that they all have at least one important thing in common: a love of K-pop.

K-pop, short for Korean pop music, is a genre of popular music from South Korea that has since become world-famous, and UnderSkore is the official

K-pop dance team of the University of Arizona. Established in 2017, the team learns the choreography to K-pop dances and posts them as "covers" on YouTube. They also perform at local Tucson and U of A events.

Their shared interest creates instant community within the team. "I enjoy seeing so many people passionate about the same thing," says Artistic Director Naomi Aragon Juarez. "We all come together and share one niche hobby. Coming together as a team and learning choreography to help promote the community is such an eye-opening and amazing experience."

Though many find UnderSkore through their YouTube channel or public workshops like the one I attended, the group also is tightly connected to the Department of East Asian Studies. Teachers and staff encourage student taking Korean to join the club not only to help promote the smaller department but also to encourage students to meet others with the same niche interests.

"I found out about UnderSkore through my Korean class," says Executive Director Andrea Lee-Cruz. "I was looking for a K-pop group on campus, but I couldn't find anything. Then, my Korean teacher posted a flyer for UnderSkore, and I was really excited. So I started going to all of the events and public workshops."

The workshop is brimming with energy, and I'm impressed to see how well everyone fits together despite some of them having just met for the first time. As the dance captains take questions about the choreography/routine, I notice smiles and laughter. It's clear to me that these aren't just people learning a dance, they are teammates, friends and peers using dance to connect with one another in a genuine way.

"It's special to think 'wow, a year ago I didn't even know who you are,' and here I am performing with my best friend on stage," says dance captain Adonn Lucero. "Being in a K-pop cover group is such a unique experience, and it's an extremely special thing to be a part of."

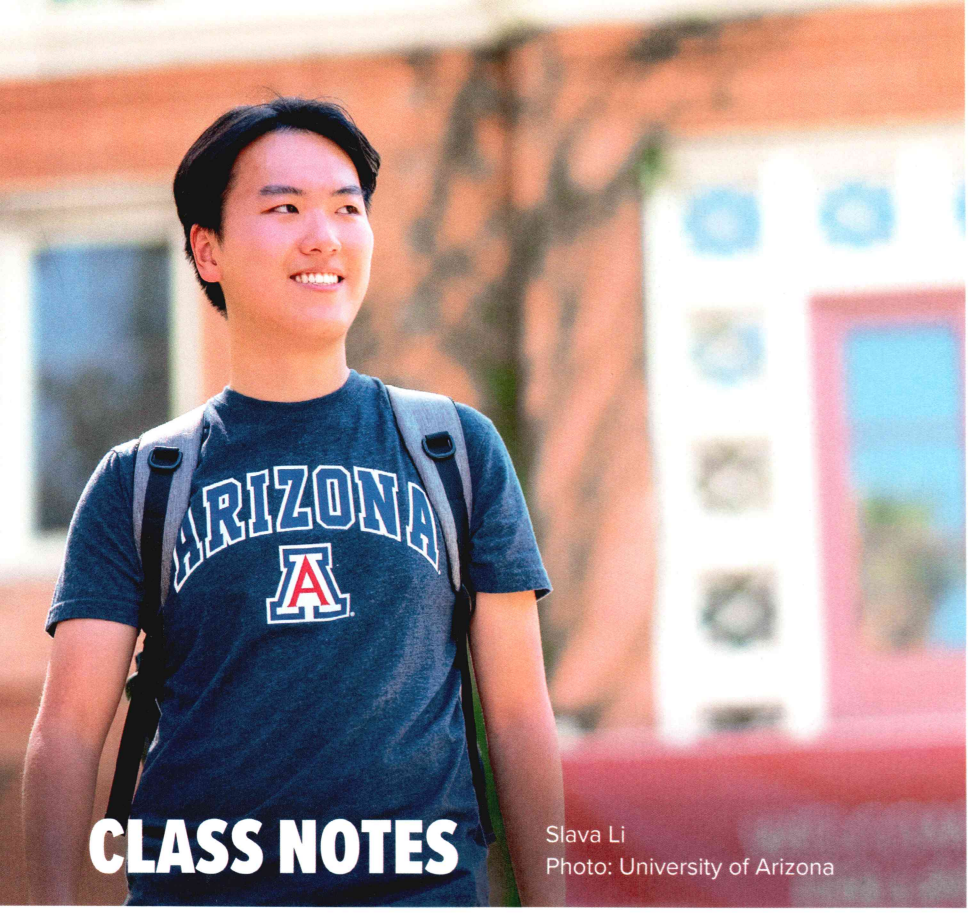
Unlike most dance teams, UnderSkore doesn't create original choreography — each member, or "idol," of the relevant K-pop group is role-played by an UnderSkore member. For each cover, members of the team must audition in hopes of getting the idol of their choice. Dance captains and leadership decide who makes it into each cover and the roles they will take on. Aragon Juarez explains that for her, this is the most challenging thing about being on a team with your close friends.

"Since you spend so much time with everyone on the team, relationships build a lot, and that makes rejection really hard," she says. "You know what everyone is capable of, and sometimes they just don't fit. One of my best friends loves Ateez and really wanted to be in an Ateez cover, but the other person embodied the idol more. It was really hard to say no to her. At the end of the day, everything we do is to better the team. She understood, took the critiques and grew from them."

When the teaching section of the workshop is done, leaders invited participants willing to perform to come up and get organized into groups of six. It can be daunting to perform a new dance in front of an audience, but in an environment so welcoming and open, I wasn't surprised to see the crowd light up.

The first group walks up and gets in position. The music booms through the room, and the crowd roars. They yell, clap and scream their way through the whole 30 seconds of the dance. This repeats for the other four groups, the crowd never losing energy that lets the dancers know they are seen, appreciated and supported.

As I gather my things to leave the Ina Gittings Building, I feel inspired. UnderSkore is an exceptional group of dancers that value not only dancing their hearts out but also treating one another with respect and love. Despite how many views their YouTube channel gets or how many events they perform at, one thing is for sure: They will always put community at the forefront, every step of the way. ◆



CLASS NOTES

Slava Li
Photo: University of Arizona

1960s

William Minter '63 recently published his book "None of Us Is Free Until All of Us Are Free: New Perspectives on Global Solidarity" (Africa World Press). His books and other publications on Africa, U.S. foreign policy and global topics can be found on Google Scholar. For 30 years, William has published a web and email newsletter. It is now available on Substack at africafocus.substack.com.

Ed Warnock '68 is now chief executive officer of the Perlan Project, an aeronautical exploration and atmospheric science research organization. The Perlan Project's Blue Condor, a zero-carbon-emission turbine aircraft, was recently nominated for the Collier Trophy.

Linda Umstead '68 resides in Hawaii and continues to be active in the arts community. Eight paintings from her "Rising Seas" series were exhibited at Pauahi Tower in Honolulu this winter.

1970s

Michael Cohen '71 published his book "The Golden Era of Sherlock Holmes and His Contemporaries: A Mystery Guide and Finding List" (Genius Books, 2024). The book explores the surge of magazine mystery series following Arthur Conan Doyle's Sherlock Holmes.

1980s

Julian Ackerley '83 announced his retirement from the Tucson Arizona Boys Chorus, where he has served as director since 1980 and assistant director two years prior. As an experienced educator, Julian has taught music at all levels and has been a guest conductor at numerous state, national and international choral festivals and conferences.

Mark Elowitz '85 conducts astrophysics research for non-profit institutes and uses remote controlled telescopes across the world to image the Moon. After earning his undergraduate degree at the U of A, he went on to earn two Master's of Science degrees in space science fields from the University of North Dakota and the Florida Institute of Technology. In 2019, Mark received his doctorate in astrophysics from the Open University in Milton Keynes, United Kingdom.

Kim Roberts '86 co-authored "Q&A For the End of the World" with Michael Gushue (WordTech Communications). The book features a series of poems, reflecting on 1950s and 1960s science fiction movies, including classics like "Godzilla."

Fred "Skydog" Emerling '85 visited his 99th, 100th and 101st countries but has no plans to visit the remaining 90 plus.

Janet Moore '87 hosted a mini reunion at her north Scottsdale home for the 1983-1994 U of A women's golf team alumni. Wildcats traveled from across the world to celebrate their beloved coach, Kim Haddow.

Julie Kessler '88 self-published her book "My Oath to a Worthy Life: Lessons Learned Through Love, Loss, and Purpose," detailing her journey to learning to love and forgive. Julie is also the co-founder of Oakley's Oath, a nonprofit aiming to protect children and pets from avoidable accidents through guidelines.

Matthew Bertani '88 was appointed by the Illinois Supreme Court to serve as a Justice on the Third District Appellate Court.

1990s

Heather Towsley '90 founded and self-funded Fireguardia, the first chemical-free, UL safety-certified fire retardant. Fireguardia has a pending patent for the world's first smart consumer fire safety device with an automatic fire extinguisher.

Adam Smith '90 published "The Journey of the Snake," a historical fiction mystery about a young woman investigating the deaths of her parents (Milford House Press).

Bryant Colman '91 participated in a 2024 South Pole expedition and plans to ski the last degree to the North Pole

in April of 2026. Fewer than 500 people in history have ventured to both poles. Bryant has one down and one to go.

Vince Yanez '93 published two books: "Two Guys, No Girl, and a Pizza Place," celebrating the 30th anniversary of his backpacking journey with a fellow Wildcat, and "Well, At Least I Got There," a collection of travel stories that didn't make it in his previous books or memoirs.

John Heinsen '94 produced an exhibition of his grandfather Walter Heinsen's photography at the Ballinstadt Emigration Museum in Hamburg, Germany. Shortly after the exhibition, John fell ill in Germany. His U of A friends dropped everything to be by his side. He is now developing a documentary and graphic novel based on his grandfather's experience in the German Air Corps. The exhibition, "Through the Lens of Life," will return to Bremen, Germany in the Summer of 2025.

Jaime Clarke '94 is staging a four-day residency at KGB Bar in New York City to celebrate his literary accomplishments.

John Candito '96 was recognized as one of CIO Connect magazine's top 10 supply chain and innovative leaders in 2025. John is the administrative director of supply chain services at Onvida Health in Yuma. After earning his undergraduate degree, John earned a master's in business administration from the University of Phoenix, a master of science in supply chain management from the University of San Diego and is a certified supply chain professional through APICS organization.

Shawn Weedon '98 was elected chief executive officer of the Geocon Group. He began with the firm in 2001 as a Senior Staff Engineer, providing geotechnical support on projects in the San Diego and Orange County areas.

Brian Coppa '99 is a product engineering lead at ULVAC Inc. and a practicing doctorate professional in the semiconductor industry. He has published numerous technical papers, journal articles and patents in his field, including foundational research on microchip scaling and processing. Brian leads a committee for his trade association, which is charting a roadmap on sustainability best practices, leveraging machine learning and artificial intelligence.

Ezra Page '99 was promoted to utilities business unit leader at Dibble, a multidisciplinary civil engineering firm. With over 25 years of experience in the industry, Ezra has a deep understanding of water's critical role in the arid Southwest.

2000s

Sahrok Kim '02 is an associate professor of management at California State University, Stanislaus, teaching business policy, entrepreneurship and business strategy. Sahrok recently co-authored the third edition of the textbook "International Business: Perspectives from Developed and Emerging Markets" (Routledge).

Sal Baldenegro '06 directed a documentary short for PBS's "NOVA" series titled "Harvesting the Future," highlighting traditional Tohono O'odham methods of rainwater harvesting and how their techniques can be used to fight climate change.

2010s

Garrett Smith '10 achieved the professional designation of certified estate planner through the National Institute of Certified Estate Planners. Garrett is a financial advisor at Affirm Wealth Advisors, with 14 years of experience in the financial services industry.

Liz Gonzalez '12 has contributed to the "Latina Radiance" book trilogy. Her third contribution "Empire of Radiance: Unity and Triumph," expands on the themes of empowerment, encouragement and elevation over adversity.

Melissa Shingles '14 was elevated to shareholder of Littler, the world's largest employment and labor law practice representing management. Melissa is currently an attorney in Littler's Phoenix office. During her undergraduate years, Melissa was president of the Sports and Entertainment Law Society and interned at the Office of the Commissioner of Major League Baseball, as well as the Arizona Diamondbacks.

Dawn Goldstein '14 '16 was recently inducted as a fellow into the American Academy of Nursing. Dawn is the director of the Psychiatric Nurse Practitioner program at Michigan State University's College of Nursing.

Marcello Montoya '19, now known as Max Bennet Kelly, is a musician whose work was recently featured in Netflix's "Heartstopper" series. During his undergraduate years, Max was involved in the Associated Students of the University of Arizona, Spring Fling, Bear Down Music Festival and the honorary system.

Bat-Orgil Bat-Erdene '19 became the U of A's first Schwarzman Scholar, a prestigious fellowship supporting a one-year master's in global affairs at Beijing's Tsinghua University, which is ranked first in Asia.

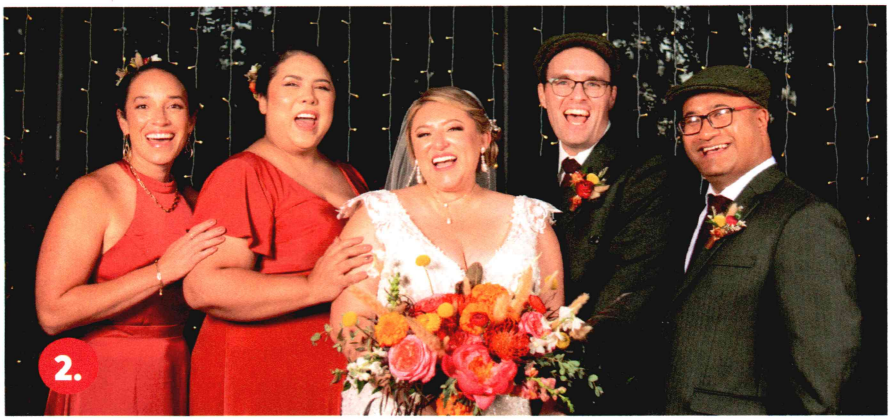
2020s

Kim Bussing '21 published her first book series "The Princess Swap" (Penguin Random House). It received a star from Publishers Weekly and will be featured on an upcoming Kids' Indie Next List. The series will be published in the United Kingdom and in French. Kim, a graduate from the creative writing MFA program, will be doing school visits, conferences and events around the country.

Kyle Mauser '21 joined Delawie in San Diego, California, as a design professional, supporting the firm's corporate, science and technology commissions.

WEDDINGS AND FAMLIES

1.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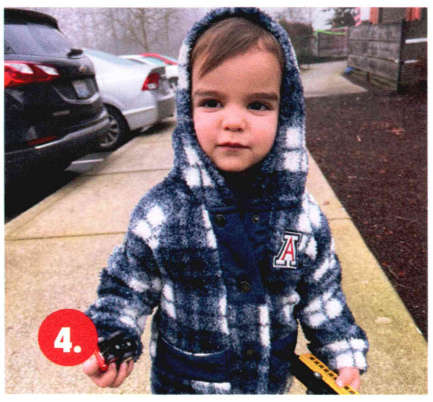

4.

5.

1. Lauren Liguore Simpson '07 welcomed twins and future Wildcats Lyla and Emmy. The family resides in Kansas City, Missouri.

2. Samantha Morriss '11 and Michael Collins were married Nov. 1, 2024 at the Tucson Botanical Gardens. Samantha's bridesmaids were fellow Wildcats **Andrea Gomez '11** and **Carina Douglas '11**.

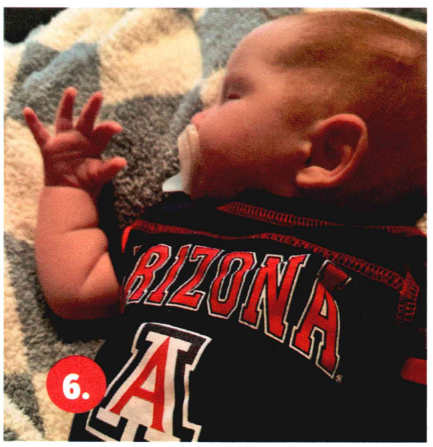
3. Eric J. Halvorson '88 is a third-generation U of A alum. His grandfather **Arthur Van Haren Jr. '49**, played baseball and football for Coach Pop McKale. Arthur's classmates included Gov. Raul H. Castro, Congressman Mo Udall and Gov. Sam Goddard. The Smithsonian's National Air and Space Museum recently featured a story on Arthur's service as Arizona's top WWII Navy fighter pilot and the top scoring Mexican American ace. Arthur was inducted into the Arizona Aviation Hall of Fame in 2012. The family's U of A legacy continues to grow with Arthur's great-grandson Colin Halvorson, a junior in the civil engineering program.

4. Mylan Myers '14 and **Ashley Bailey '13** welcomed future Wildcat Austyn Myers Jan. 3, 2022. His grandparents, **Robert Myers '79** and **Alma Myers '91**, are also Wildcats.

5. Krista Drummond '15 and Slater Kirk '18 were married in Bozeman, Montana, Sept. 27, 2024. Both Krista and Slater received their master's degrees in optical sciences.

6. Sharene Hollenbach Best '10 and Lee Best welcomed their newest Wildcat, Brock Thomas Best, grandson of Tom and **Julene Smithson Hollenbach '71**. Brock loves to hold up the Wildcat hand sign, even in his sleep!

7. Caleb Gannon '20 and **Jenna Bergevin '17** were married in Marana in March 2024. Caleb and Jenna met as graduate students in 2016 through mutual friends.



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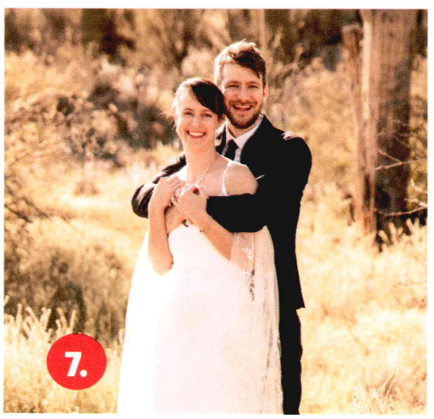

7.

FAREWELL, DEAR FRIENDS

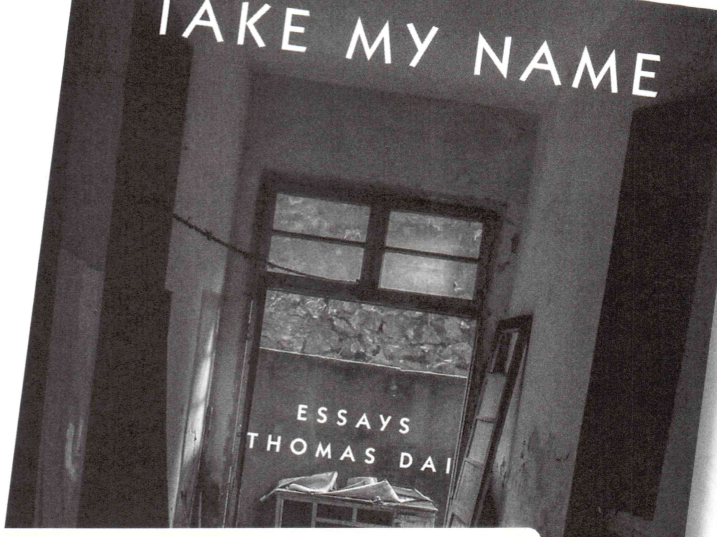
Honoring Wildcats who have passed away

Yetta K. Bidegain '48
John H. Ladd '48
Clayton E. Niles '48 '49
Virginia I. Phillips '48
Dorothy A. McGoey '49
Carl A. Inglish '50
John W. Reinhard '50 '52
Robert S. Sundt '50
Patricia L. Peterson '51 '74
Fred H. Johnson '52
Bruce C. Thoeny '52
Alfred E. Celaya '53
Nancy M. Gillenberg '53 '61
Joyce W. Haines '53 '70
William F. Haug '53 '56
Mary K. Kirk '53
Roland P. Beeler '54
David T. Clatworthy '54
Vernon F. Dickerson '54 '59
Paula H. Large '54
Thomas H. Latimer '54
Javier E. Ledesma '54
Luella H. Smith '54
Janice M. Stoner '54
Helen W. Tang '54
Mary Ellen Cutlip '55
Louis H. Enloe '55 '57 '60
Charley J. Gregg '55 '56
Richard A. Jacobs '55
Frank W. Adams '56
Gary B. Friedman '56
Ben F. Gin '56
Douglas S. Holsclaw '56
F. Richard Kamps '56
Karl F. Kohlhoff '56
Jerome R. Koupal '56
Stephen Terry '56 '57
Tom Tomooka '56
Marjorie S. Witman '56 '64
Marvin Wolin '56
Darlene M. Chang '57
Sally F. Elkind '57
Malvin J. Michelson '57
Darlene J. Vuicich '57
Charles E. Woods '57
William F. Brinkman '58
Judith M. Carpenter '58
Froilan H. Cota '58
John M. Hook '58
Kenneth I. Lange '58
L. Jean Larson '58 '59
Carolee T. Mack '58
Judith Mitchell '58
James F. Eager '59
Harry M. Fennemore '59
Martin A. Link '59
Thomas J. McIntosh '59
Theodore E. Woods '59
Judith C. Abrams '60 '76
Margaret S. Barnebee '60
Judith K. Cuming '60
Mary S. Darlow '60 '57
Dennis A. DePasse '60 '62
Robert J. Hirsh '60 '64 '64
Donald E. Johnson '60
Ray H. Johnson '60 '61
William J. Klaus '60
Joseph F. Kranhold '60
Margaret V. Mittendorf '60 '61 '85
Wiley Murphy '60 '63
Charles A. Orsi '60
Frank Romero '60
Gilbert A. Saltzman '60
Dale G. Shellhorn '60
Gayle E. Siroky '60
Frank W. Uvodich '60
Anne C. Walker '60
Albert E. Bartz '61
Robert C. Clements '61
Douglas C. Draper '61 '60
James M. Hill '61
Stanley M. Jerman '61
Marya D. Keeth '61
Marjorie B. Koconis '61
David R. Murray '61
Allan G. Riker '61
C. Webb Crockett '62
Joette D. Gambs '62
William M. Mullahey '62
Peter G. Nelson '62 '67
Robert Petrucciani '62
John W. Potter '62
Albert T. Quick '62
Carl A. Runk '62 '65
Robert M. Skelding '62 '63
Karen R. Taucher '62 '83
Dennis L. Underwood '62
Helen H. Woodburn '62 '64
Mary M. Barrett '63 '64 '65
Carole S. Boldt '63 '72
Patricia C. Booth '63
Ruth A. Gray '63
Robert V. Kerrick '63 '66
Laurie K. Manhard '63
Louis M. McDermott '63
Katherine S. Melsa '63
Barbara J. Murray '63
Peter Ronstadt '63 '69
Malcolm L. Terence '63
J. Robert Wayland '63 '67
Norma R. Wilson '63 '66
Jerome L. Anderson '64 '67
Paul H. Crumbacher '64
Charles A. Ditsch '64
Mary E. McCarty '64 '65
David L. McVey '64
Dante E. Paluselli '64
Sally A. Rea '64
Maurice J. Saroni '64 '66
James A. Archer '65
Donald L. Burton '65
Ervin J. Dunham '65
Jeffrey R. Fritz '65 '69
Lawrence Gardanier '65
Kay V. Herrera '65
Diane P. Hoffman '65
Cheryl A. Munson '65
Mary E. Stafford '65 '68 '81
Barry J. Zimmerman '65 '69
Robert S. Alcumbrac '66 '73
Carla J. Koellmann '66
Roscoe C. Lawless '66
Eleanor R. Manire-Gatti '66
Thomas L. Richardson '66
William B. Schoephoester '66
Stephen J. Slavin '66
Joyce B. Steers '66
Alice G. Turner '66 '71
Peggy D. Weiss '66 '71
Michael N. Bernal '67 '71
Barry E. Bettner '67
Richard L. Caldwell '67
Thomas C. Grissom '67 '69 '73
William E. Horst '67
Lorna K. Kraemer '67 '71
Michael J. O'Grady '67
Leo A. Roop '67
Travis L. Rushing '67
Curtis L. Schilling '67
James S. Fleming '68 '71
John I. Gould '68
Jaime A. Ground '68
Dean E. Guenther '68
Mary L. Hawse '68
William W. Hess '68
John A. Heuvelman '68
Howard D. Hinson '68
Richard J. Hurley '68 '70
Philip D. McArthur '68 '71
Randall R. Norstrom '68
Sara A. Roumbanis '68
Paula M. Schade '68 '69
Thomas J. Sutton '68
Maxine B. Switzer '68
William P. Brinkman '69
Mary M. Curry '69
Francis W. Haugh '69
Barbara E. Johnson '69
John W. Kemble '69
Wendy Longley-Cook '69 '71
Virginia B. McCoy '69
Lee E. Netter '69
Peggy A. Spence '69
Bernice G. Wilson '69
Barbara E. Borgersen '70
Malinda F. Briggs '70
Paul M. Fedock '70
Ronald A. Haller '70
Frances A. Hitchcock '70
Lillis L. Kingman '70
Thomas P. McAtee '70
Michael A. Nelson '70
Bruce E. Rippeteau '70
Burton H. Schneider '70 '77 '83
Gary D. Timbers '70
William J. Bartley '71
Lynn D. Collie '71
John L. Drake '71
Maxine Kimmey '71
Robert K. Sisley '71
Ruth L. Smothers '71 '75
William J. Stoeber '71
Sarah C. Baker '72
Alan L. Buseman '72
Kenneth R. Chiaro '72 '73 '84
Richard L. Glinski '72
Patria Griffin '72
Charles R. Harpster '72
William D. Kalt '72 '80
Stephen L. Kanouse '72
Carl O. Winters '72
Kerry L. Baldwin '73 '79
Michael E. Campana '73 '75
Carol Susan Green '73
Pete Kozachik '73
Ronald L. Lopez '73
William S. Morton '73
Marilyn A. Surina '73
Debra C. Brenner '74
Joyce Cashman '74
James A. Deal '74
J. William Demory '74
Phyllis N. Goins '74
Terrance L. Hagen '74 '81
Donald G. Hendricksen '74
Jeffrey P. Hogg '74
Mary A. Karr '74
Kenneth F. Lyon '74
Johanna B. Stein '74
Robert G. Sulzbach '74
Karen B. Van Lenten Harris '74
John D. Algeo '75 '81
William T. Bradel '75
Margaret R. Dobler '75
Tommy F. Gin '75
Robert M. Hunter '75
Stephen J. Lyding '75
Susan A. Matt '75
Timothy R. McGinley '75
John W. McLean '75
Martha H. Quinn '75
Sara E. Weatherford '75
Robert J. Canady '76
Patrick G. Cunningham '76
Michael S. Gallon '76 '82
Linda J. Garber '76
Ann C. Heine '76 '81
Wayne E. Hill '76
Terry L. Keeney '76
Joan J. Lundering '76
Jonathan A. Bliven '77
Robert J. Brooks '77
Kathryn A. Hardy '77
Alan D. Luke '77
Colleen M. McCarthy '77
Wendy H. Netzky-Jolly '77 '79
Frederick W. Reamer '77
Lawrence V. Tagg '77 '79
Alice M. Textor '77
Robert T. Walsh '77
Perry E. Annett '78
James M. Copus '78 '90
Thelma E. Davis '78
Donna M. Friesen '78
Dale K. Patton '78
Donald N. Powell '78
Jerry Queen '78
Rosemary D. Stewart '78 '80
Barbara J. Gray '79 '86
Michael C. Hoffman '79
Virginia C. Leavitt '79
Michael J. Murray '79
Richard T. Nero '79
Patrick E. Rankin '79
Sally A. Sheridan '79
Kathleen M. Silvers '79 '82
Christina Alvarez '80
Geralyn M. Bagnall '80
Jeffrey L. Gwilliam '80
Margaret A. McDonald '80
Robert D. Messali '80
Laura T. Sullivan '80
Ramadjita Tabo '80 '82 '85
Hazel V. Dean '81 '83
Susan L. Ey '81 '82
Steven G. Gregg '81
Steven A. Maril '81
Rubye M. Roach '81 '83
Leslie A. Irwin '82
Cynthia J. Allen '83
Judith F. Anderson '83
Suzanne C. Doane-Davis '83 '85
Stephen J. Posey '83
Barbara M. Sack '83
Clarissa J. Allen '84 '07
Kelly J. Deyoe '84 '87
Enriqueta Q. Najperk '84
Martin R. Villegas '84
Donald G. Wilkinson '84
William E. Azevedo '85
David W. Felker '85
Judith Kanner Gordy '85
Scott J. Handler '85
James Howe '85
Louis E. McMurray '85
Norman R. Garrison '86
Lee C. Jackson '86
Marian D. Kelley '86
Daniel J. Benkert '87
Barbara D. Bennett '87 '90
Jean E. Davis '87
Raúl M. Grijalva '87
Mark W. Hurlburt '87 '95
John C. Bormanis '88 '90 '94
Christine M. Darrohn '88
Karen L. Dilka '88
Laura L. Fingleton '88
Hannah M. Fisher '88
Michael V. Montgomery '88 '92
Terra L. Billingsley '89
Charles E. Simon '90
Thomas E. Hughes '91
Magen T. Morse '91 '98
Gary S. Wallace '91
Amy M. Lau '92
Helen A. McDaniel '92
Vickie M. Peck '92
Carolyn F. Stevens '92
James R. Veomett '92
Esther C. Howe '93
Michael J. Roberts '94
David M. Stagg '95
John R. Heigl '96
Thomas P. Alexander '97
Jonathan Michaels '97 '99 '04
William F. Earley '99
Dia K. Hurd '99
Barbara M. Kausen '99
Terry A. Switz '99
Susannah Elwyn '00
Brian A. Larson '00
Daniel Marron '00
Elizabeth S. Morton '00
Dallas S. Green '01
Kathy E. Burbank '03
Olga L. Gutierrez '03
Yui Umehara-Garewal '03
Elizabeth M. Byrd '04
Inih A. Ekpo '05
Leslie P. Frayne '05
Michael B. Saunders '06
Crystal C. Carrancho '07
Samuel T. Larson '09
Amanda M. Miller '11
Samuel J. Itzin '13
Jessie V. Rebl '14 '21 '23
Michelle C. Rivera '15
Katie D. Huntzinger '20
Saul G. Perea '20
Brett T. Jones '23
James Hoopes '24
Jeff Swedenhjelm '24

READING ROOM

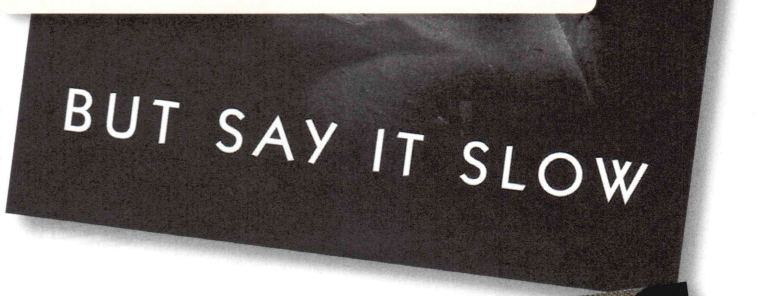
Alumni of the U of A's Creative Writing MFA program are out and publishing.

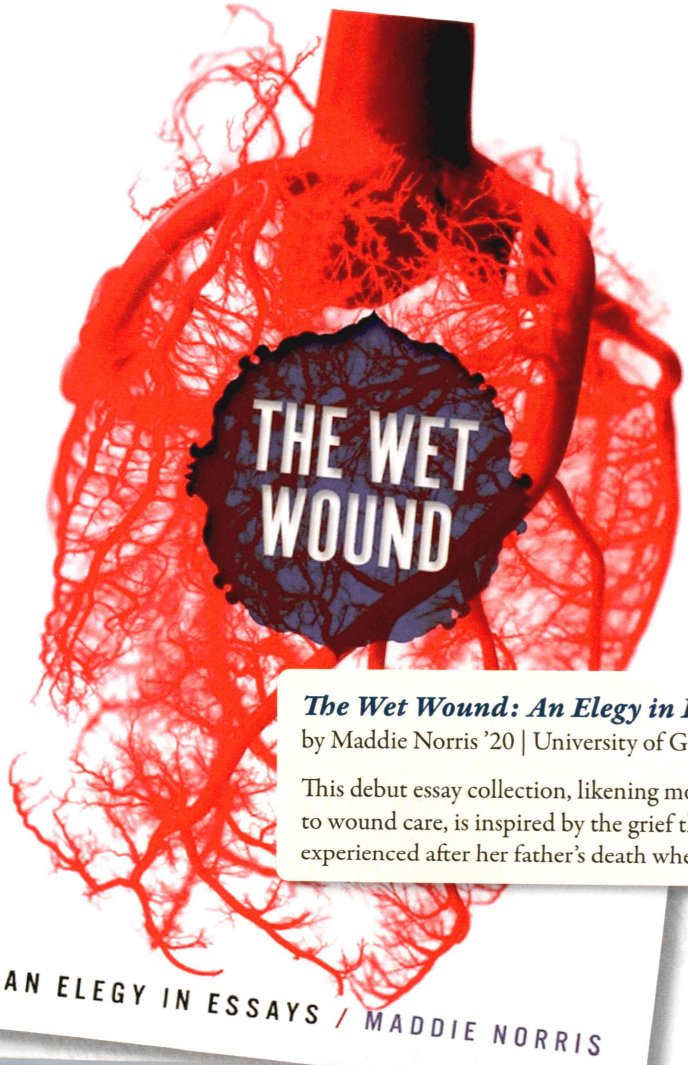
Did you know the University of Arizona's MFA in Creative Writing is considered among the top programs in the country? Known for its vibrant literary community and rigorous, supportive workshop culture, the program offers tracks in fiction, poetry, and creative nonfiction — each led by faculty who are also working writers. The program has long been a launchpad for emerging voices and includes three years in residence culminating in the production of a thesis manuscript. Highlighted here is some of that work, including nonfiction essays and stories by MFA graduates.



Take My Name But Say It Slow: Essays
by Thomas Dai '17 | W. W. Norton & Company

A luminous memoir in essays that explores place, identity and what it means to grow up queer and Asian in the American South.





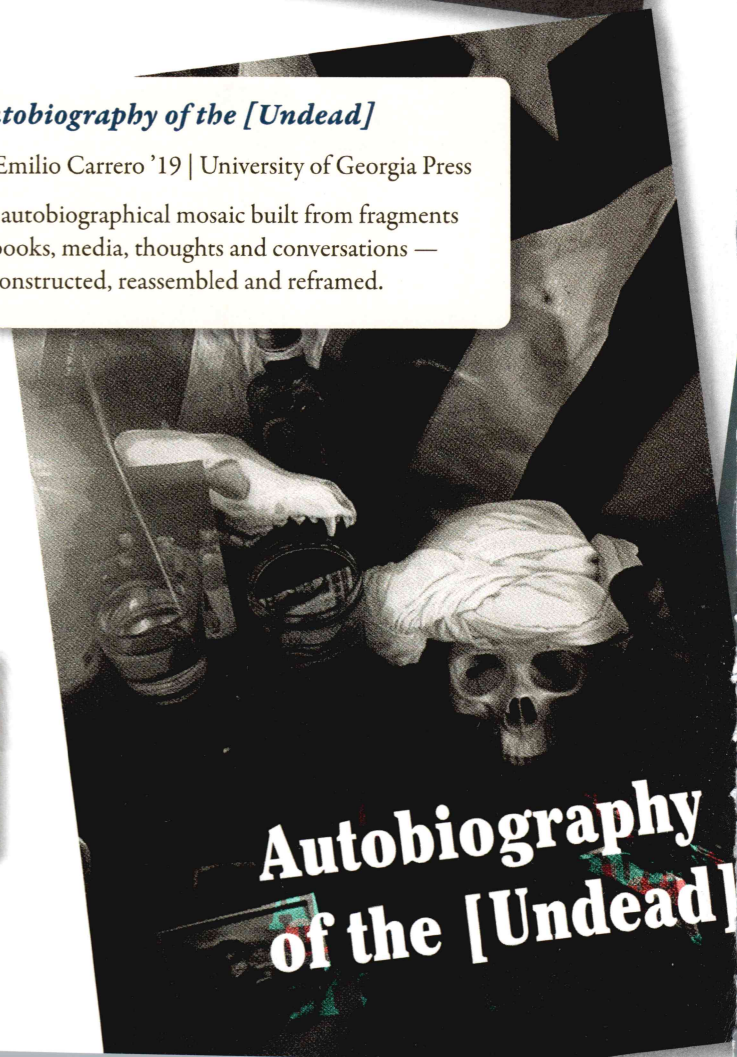
The Wet Wound: An Elegy in Essays
by Maddie Norris '20 | University of Georgia Press

This debut essay collection, likening mourning to wound care, is inspired by the grief the author experienced after her father's death when she was 17.

Autobiography of the [Undead]

by Emilio Carrero '19 | University of Georgia Press

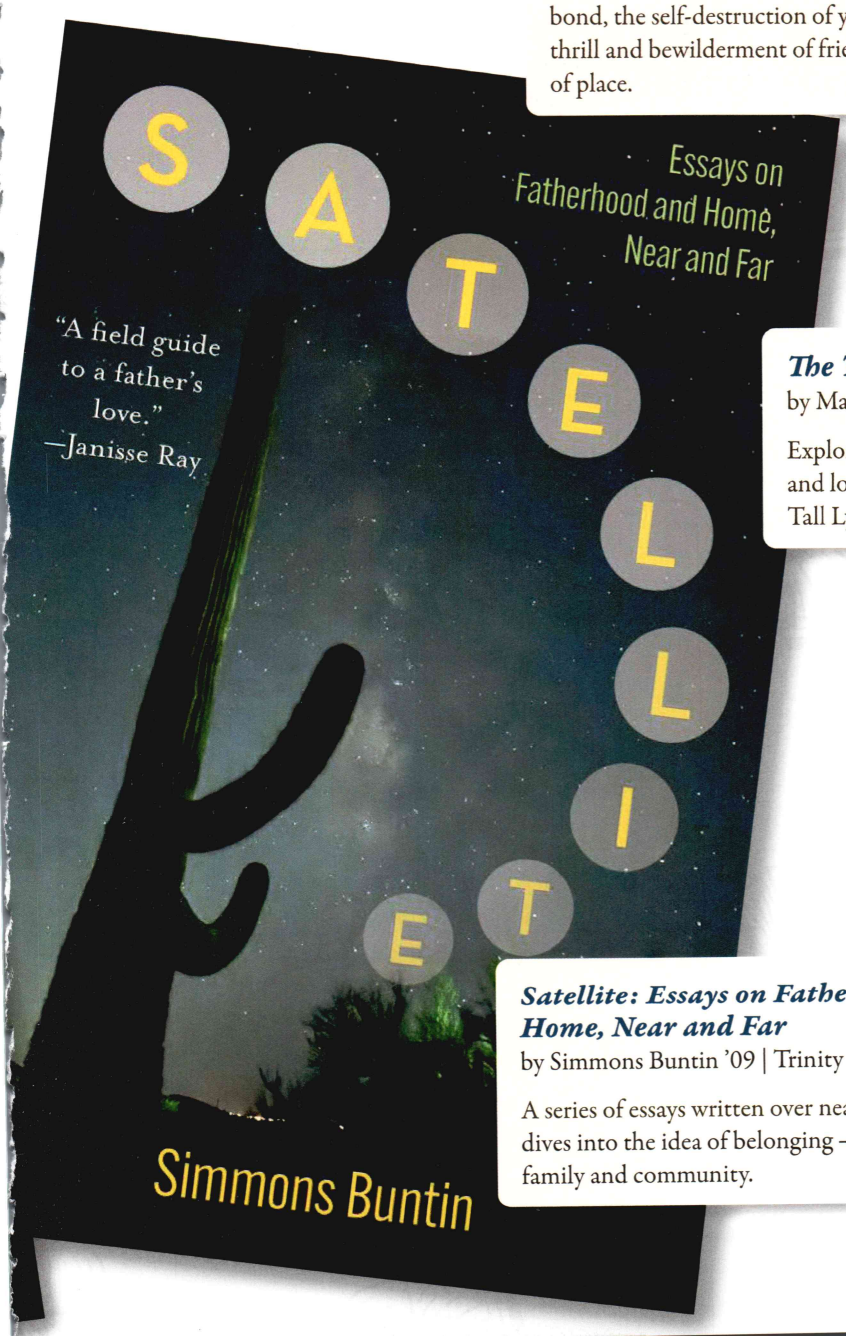
An autobiographical mosaic built from fragments of books, media, thoughts and conversations — deconstructed, reassembled and reframed.



In rankings, the U of A MFA program has been named the No. 4 creative writing program overall and No. 2 for creative nonfiction.

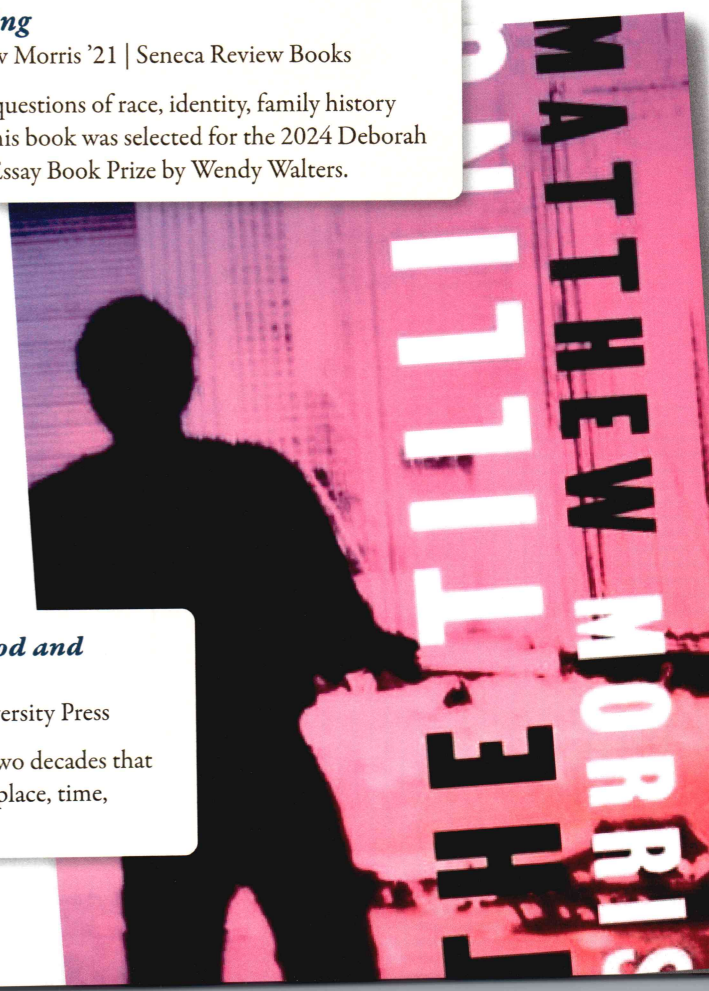
Origin Stories
By Corinna Vallianatos '99 | Graywolf Press

This meditative collection dramatizes the mother-child bond, the self-destruction of young womanhood, the thrill and bewilderment of friendship, and the power of place.



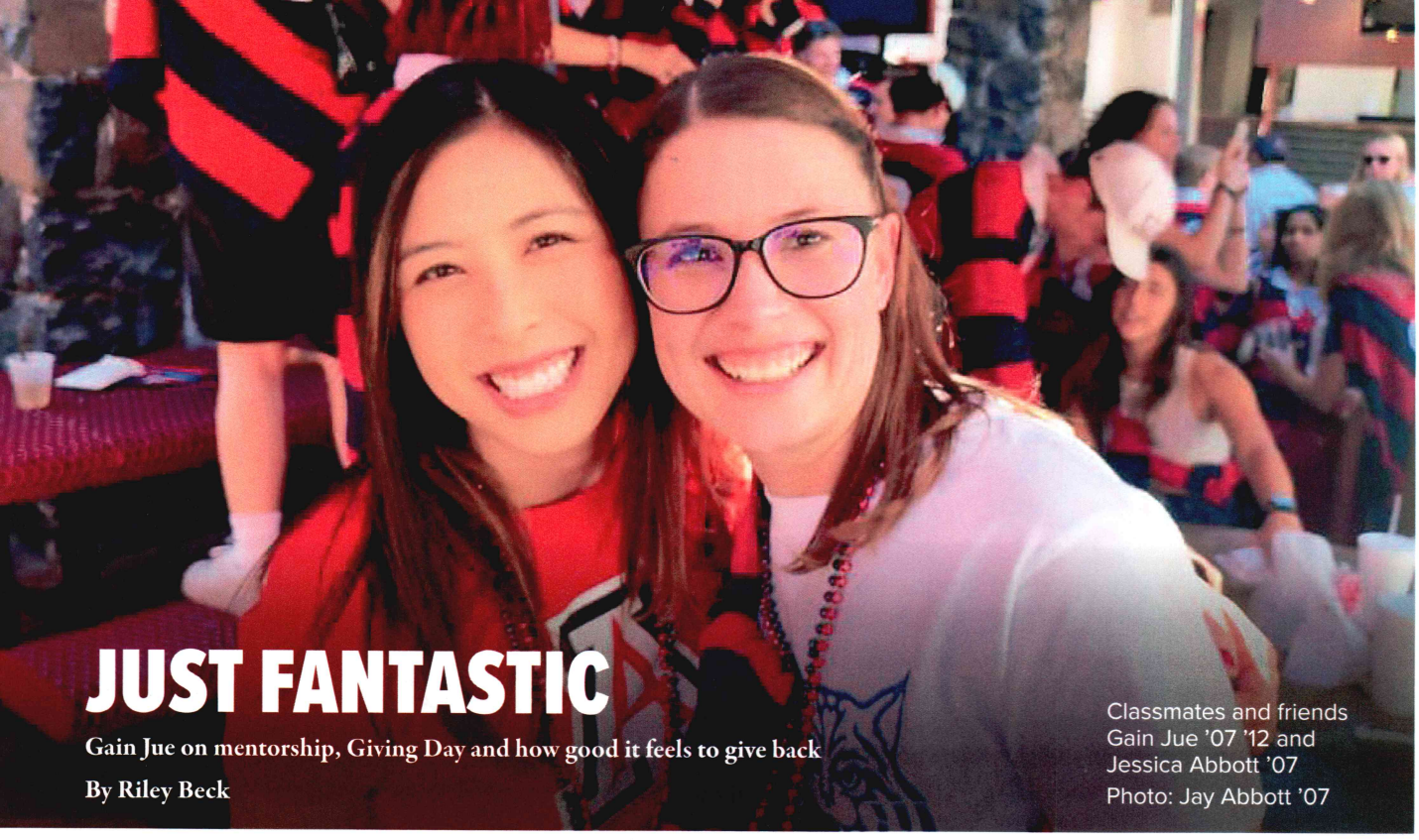
The Tilling
by Matthew Morris '21 | Seneca Review Books

Exploring questions of race, identity, family history and love, this book was selected for the 2024 Deborah Tall Lyric Essay Book Prize by Wendy Walters.



Satellite: Essays on Fatherhood and Home, Near and Far
by Simmons Buntin '09 | Trinity University Press

A series of essays written over nearly two decades that dives into the idea of belonging — in place, time, family and community.



JUST FANTASTIC

Gain Jue on mentorship, Giving Day and how good it feels to give back

By Riley Beck

Classmates and friends Gain Jue '07 '12 and Jessica Abbott '07
Photo: Jay Abbott '07

When she was 18, Gain Jue '07 '12 received a scholarship to attend the University of Arizona that changed her life. Now, she dedicates time, talent and financial resources to supporting other Wildcats. When asked why she gives so generously, Jue says, "I wouldn't be where I am today in my life if it weren't for going to U of A. For me, it's like paying it forward. ... Plus, when I'm volunteering my time, I get a lot out of it. I get to learn from really great leaders."

Jue, a finance director for Microsoft, lends her insights to the U of A Foundation's Board of Trustees as well as the Alumni Advisory Council. She also gives back through the Wildcat Mentor Society and has sponsored a successful $3,000 Giving Day matching challenge to support its programming. And she has made gifts to many other areas across campus, most notably the President's Pond, known affectionately to most Wildcats as the "turtle pond" and even more affectionately to Jue as the place where she and her husband, Casey Merrill '06, used to meet for breakfast burritos.

Jue knew she would attend the U of A when she was offered that full tuition scholarship. What she didn't know was how much she would love the Arizona experience. Regarding her first days on campus, she reflects, "I didn't realize how beautiful it was, and also it's big but it's small. [It would offer] me a lot of options, but I could still feel like I was going to be a part of something."

The Wildcat Mentor Society didn't exist when Jue was a student. But she experienced the benefits of mentorship firsthand at Microsoft, so when the Wildcat Mentor Society was founded, she jumped at the chance to be a mentor in its inaugural cohort. Regarding what has surprised her most in mentoring current Wildcats, Jue replies, "How fast you can flourish."

Jue is still connected with two mentees she was paired with on her first day as a mentor; she has supported them from their student years through the beginning of their careers. "They're so sure of themselves. For me, it's meaningful to be a part of their life growth and to go through milestones with them — finals, graduation, career pivots, learning to manage other people. I feel like I've lived multiple lifetimes with them. Watching them and being able to be part of their life growth is just fantastic."

Jue's experiences on both sides of the mentor relationship inspired her Giving Day matching challenge in 2021. "What better way to pay it forward?" she asks. "I would hate for people to not realize their potential as early as they can in their career."

Jue was inspired to help beautify the beloved President's Pond on one of her Homecoming visits to campus. After reaching out to the Campus Arboretum with a substantial gift toward its renovation, she teamed up with her friend Jessica Abbott '07 to dedicate 35 bricks — one for each member of the Links Honorary Society — in the vicinity of the pond. They enjoyed paying tribute to their lasting connection with this elite student group while making a difference to current Wildcats on campus.

Jue's commitment to giving back to Arizona is ardent: "I just always want people to show up as their best. If there is a way I can help amplify all the great work the university does, I want to do that."

Sponsorship opportunities: arboretum.arizona.edu/sponsorship ◆

ALUMNI OF THE YEAR AWARDS

Distinguished U of A graduates honored at Alumni of the Year awards ceremony.

Photo: Chris Richards

The University of Arizona celebrated the accomplishments of its Alumni of the Year award recipients in February. The honorees were nominated by their colleges and formally approved by the Alumni Advisory Council, a volunteer board of 19 members who advise on alumni engagement and outreach efforts.

W.A. Franke Honors College
Victoria DeFrancesco Soto, class of 2000

Wyant College of Optical Sciences
Joseph Shaw, class of 1996

Mel and Enid Zuckerman College of Public Health
Mary Foote, class of 2007

College of Fine Arts
Joan Ashcraft, class of 1974, 1976 and 1986

College of Nursing
Cecil Drain, class of 1976 and 1980

Eller College of Management
Callie Groth, class of 2010 and 2014

College of Engineering
Jerry Hunter, class of 1988 and 1990

College of Humanities
Sean Elliott, class of 2022

College of Architecture, Planning and Landscape Architecture
Robin Shambach, class of 1985

James E. Rogers College of Law
Donald Powell, class of 1969 and 1972, and Susan Powell, class of 1971

College of Medicine – Tucson
Sunita Mishra, class of 1989 and 1994

R. Ken Coit College of Pharmacy
Alan Dan Barreuther, class of 1973

College of Science
Duncan Buell, class of 1971

College of Social and Behavioral Sciences
Jan Lesher, class of 1977

College of Agriculture, Life and Environmental Sciences
Todd Pletcher, class of 1989

College of Education
Marilyn Ludwig, class of 1952 and 1956

Learn more about the Alumni of the Year award recipients:

alumni.arizona.edu/celebrate-arizona/awards/alumni-year ◆

BE THE RIPPLE

A teacher and first-generation college graduate reflects on his time at the U of A.

As told to Arizona Alumni by Jonatan Noriega '17 '19

When I was in 8th grade, my teacher Ms. Neal let me walk around the room and teach the math to the other kids. It was fun — like, "hey, I know how to do this, let me show you." She made sure I learned everything I could. Thinking back, it was less about me knowing the math and more about allowing me to be me. I wasn't doodling or drawing or being a menace.

When I was getting ready to choose my high school, she told me I should apply to Brophy College Preparatory. She said I had the "charisma" to make it. I'd never heard of it before. When I interviewed, the dean asked me, "Why do you want to come here?" I said, "I don't know why I want to come here. I was told it would be a good opportunity."

My freshman year, I had culture shock. It was a lot for me to grasp. I never really adapted to Brophy, and I don't know why. There were smart kids there, though, and I was determined to run with them. My senior year, I got into the U of A. Ms. Neal said, "I knew you would make it."

I live close to ASU now. When people ask me, "Where'd you go to school?" I'm proud to say, "the U of A." And it's always *the* U of A. Nobody says I went to *the* ASU.

I was fortunate to have a full ride, but I struggled my first year. I didn't have friends or family nearby. But once I started exploring, I found my place. I spent most of my days on campus, 8 a.m. to 10 p.m. I could sit on benches for hours and just watch people. People running and walking. I always thought, "I've never seen these people before and I'm never gonna see these people again." Every relationship and interest I had revolved around the U of A: basketball and football games, Zona Zoo; my job at the Alumni Association, where I learned that being early was being on time and being on time was late. I learned to do things right the first time. Leaving Tucson after nine years of undergrad and grad school to return to Phoenix to teach was difficult for me. But it was my dream.

I still remember the stats: 30% of new teachers don't make it past their third year and 50% of teachers don't make it past their eighth year. I remember walking into a kindergarten class and everybody's tiny. I got down on my knees to talk to a little kid. "Hey, what are you drawing?" This little kid, he's all shy, and says, "cactuses."

In the back of my head I'm thinking, "actually, it's cacti." But, you know, I'm not going to ruin it for the kid.

And I talked to the next kid. "Hey, what are you drawing here?" And he just slams his crayons down. "We're all drawing cactuses."

"I'm sorry, man. I'm sorry."

I remember looking at the professor like, "Get me out of here. I can't be in this room. Not kindergarten." I never stepped into a kindergarten classroom again.

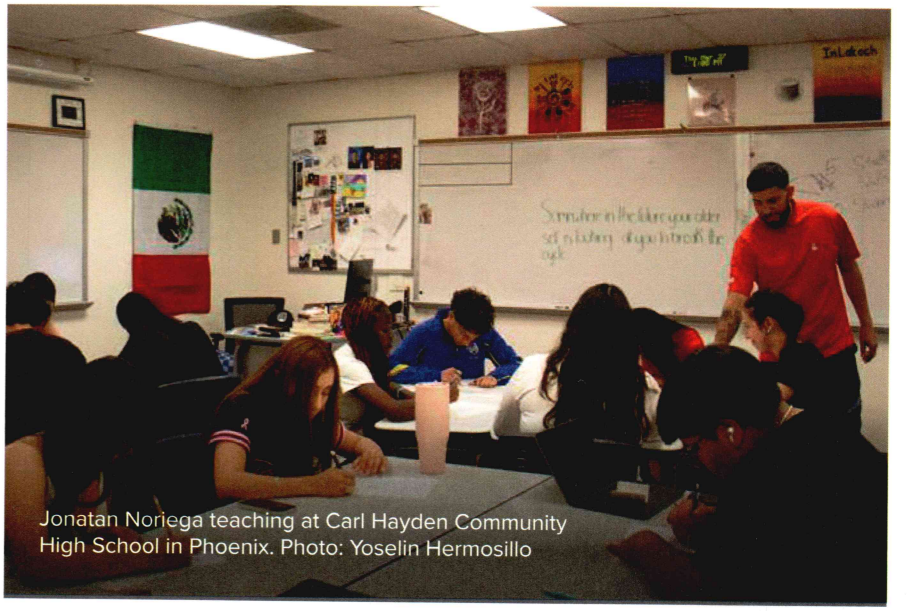
I taught at Challenger Middle School during my master's program. That place — either it makes you or breaks you. If you can survive there, you can survive teaching anywhere. It's a rough school. Right now, if my kids give me attitude, I'm like, "Not today. Sit down, be quiet."

Now I'm at a high school about four miles from where I grew up. I teach freshman English and Mexican American Studies to seniors. Not all my students are Mexican, so we read stories by Latino and Latina authors from El Salvador, Guatemala, Honduras to give a broader spectrum of authors from their home countries. We think a lot about college in that class, working on essays, talking about scholarships, mentally preparing for the college landscape. I let them know, "You're not going to be around a lot of people of color; that's not a demographic you're going to constantly run into." And they don't believe me. But when we go on field trips, they see for themselves.

I say, "I want you to look around." They ask, "Where are all the Hispanic people?" I point out, "If you want to see Hispanic people here, it's going to be you, and if it's not you then it's nobody." That really clicks with them. People sometimes ask me why I don't teach at Brophy. I say, Nah, those kids don't need me.

I took two Mexican American Studies classes at the U of A with Professor Curtis Acosta. I was super glued to everything he talked about. I never really had role models like that growing up.

I also took Masculinity 151, which was an interesting topic. I ended up teaching a similar class for a couple of years when I was at Challenger. I had 40 boys learning what it means to be a man and how that definition changes depending on your culture. We broke apart all the preconceived notions of masculinity. The kids loved it. Once the semester was over, they wanted to take the class again.



Jonatan Noriega teaching at Carl Hayden Community High School in Phoenix. Photo: Yoselin Hermosillo

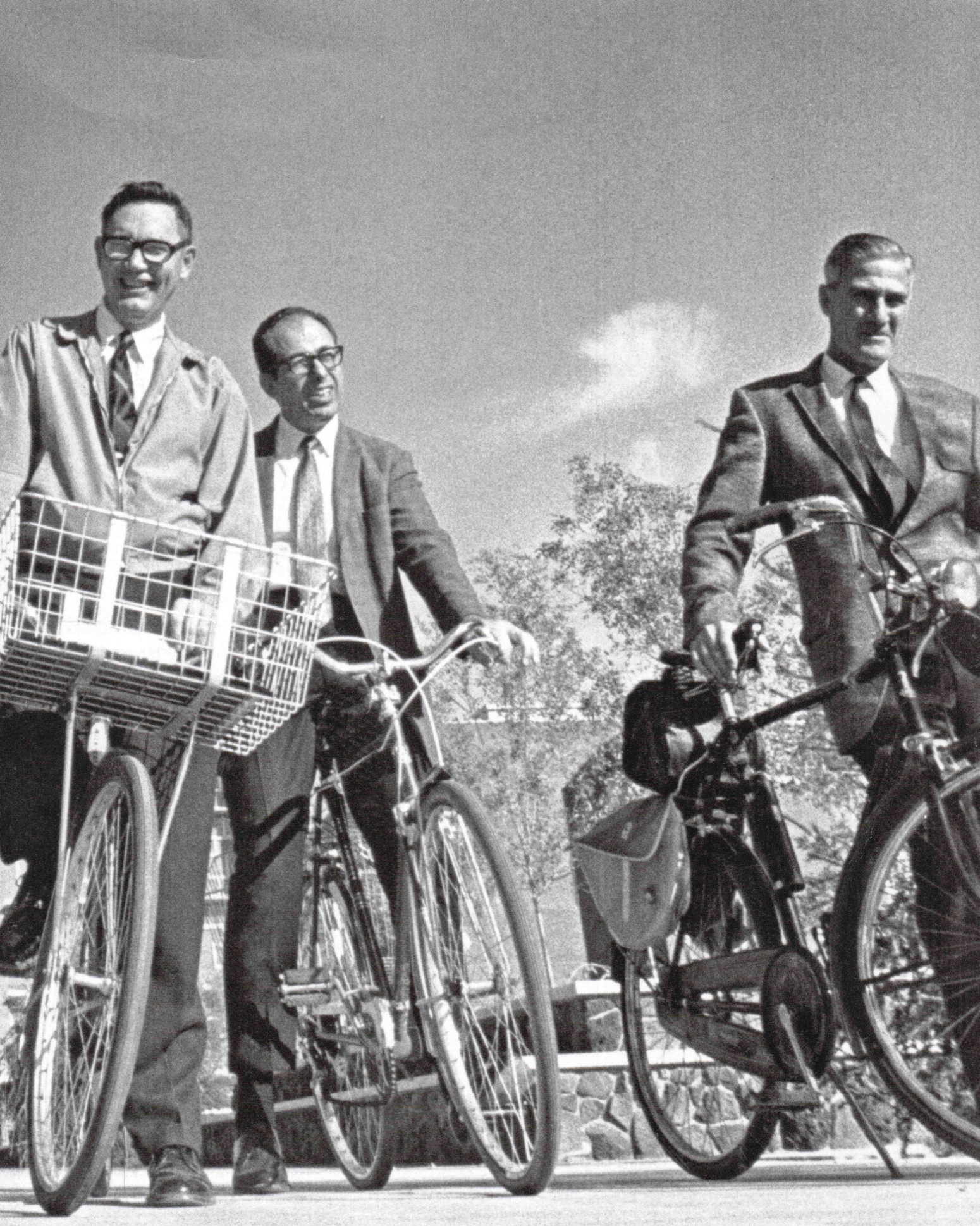
Being a first-generation graduate gave me hope that other people in my family could do it, too. But sadly, it's just been me. That's why I'm so hard on these kids, but I'm starting to see the full circle. Some of those Challenger students are in college now, not just at the U of A, but all over the country. And when a freshman with college aspirations becomes a senior, I remind them, "You were interested in going to college, so come to my class — you'll learn something." I help them finish their applications and turn them in to the counselor. It makes me happy.

College is important because it allows you access to your dreams. A lot of kids I have want to work in the medical field, be social workers, become architects or engineers. You've got to go to college for those careers. Some kids want to go to trade school so they can get a good-paying job. Trade schools and colleges are equally important depending on a kid's reasoning. I don't have any students right now that say, "I want to go to college because my parents are making me," or "because my parents say it's important." For my seniors, it's intrinsic. It is "I want to go to college because I want to." I think going to college is only important if you want to go. If you don't want to go, there are other avenues.

I used to work on class notes for the Arizona Alumni Magazine, and I remember we got this email from an alum saying they no longer wanted to receive the magazine because they graduated in the 1970s and the U of A no longer felt special to them. I was with my co-worker, Kasey — we were both seniors at the time — and I was like, "oh my God, that's so sad." She was shocked by it, too. I thought, "Yeah, that's bound to happen. We're gonna be like that one day, too." But even now, every time I get the magazine, I get excited to read about all the stuff happening, the new buildings and accomplishments. I got so much out of the U of A that it will always be special to me. Because I know that right now, somewhere on that campus, there's somebody like me who is a first-generation kid, and the U of A is taking a chance on them, giving them a full ride. It's like: Here, we'll see what you're capable of. And that kid is doing all right. And then whenever they graduate, I know the U of A already has their eyes on the next person. And it just ripples. ◆

REARVIEW

Images from U of A History



Happiness is a two-wheeled thing, circa 1960. Image courtesy Special Collections, the University of Arizona.

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